



Survey of Cluster Munition Policy and Practice

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I. Introduction

Cluster munitions stand out as the weapon category most in need of stronger national and international law in order to protect civilians during armed conflict. They pose an immediate danger to civilians during attacks due to their inaccuracy and wide dispersal pattern. After conflict they pose another lasting hazard due to the high number of landmine-like submunition duds that litter the landscape. There is a potential future danger of widespread proliferation. Human Rights Watch has been raising concerns about cluster munitions since the early 1990s, and in 1999 was the first non-governmental organization to call for a global moratorium on use of cluster weapons until their humanitarian problems have been resolved.

Human Rights Watch calls on states to negotiate urgently a legally-binding instrument that addresses the humanitarian concerns posed by the use, production, stockpiling, and transfer of cluster munitions. The Norwegian-led initiative to develop an international treaty to prohibit cluster munitions that pose unacceptable humanitarian harm is the best opportunity to do just that. Human Rights Watch believes that any country that is serious about acting quickly to protect civilians from the horrible effects of cluster munitions should take part in and support this initiative, as it is the only credible process for alleviating the suffering that they cause.

Human Rights Watch has for many years identified what steps should be taken to minimize the harm cluster munitions cause to civilians. They include: a) prohibiting the use of cluster munitions in or near populated areas; b) prohibiting the use, production, and trade of unreliable and inaccurate cluster munitions; and c) destroying stockpiles of such cluster munitions. Human Rights Watch believes that the vast majority, if not all, cluster munitions in existing stockpiles should never be used. These “legacy” weapons are so inaccurate and/or so unreliable that they pose unacceptable risks to civilians, either during strikes, post-conflict or both. It is up to states to demonstrate conclusively that any specific cluster munition is accurate and reliable enough to avoid excessive harm to civilians.

This document contains an overview of states practice regarding cluster munitions, a timeline of cluster munition use since 1943, and country-by-country profiles of the policy and practice of all the states that are known to stockpile cluster munitions, as well as several others. For each country, it highlights any known cluster munition production, use, and transfer, as well as any statements on the applicability of existing international humanitarian law to cluster munition use.

II. Overview of State Practice

Globally, 34 countries are known to have produced over 210 different types of air-dropped and surface-launched cluster munitions including projectiles, bombs, rockets, missiles, and dispensers. Existing cluster munitions contain billions of individual submunitions. Cluster munitions are stockpiled by at least 75 states and have been used in at least 23 countries. According to available information, at least 13 countries have transferred over 50 types of cluster munitions to at least 60 other countries.

International Actions

International awareness of the need to deal with cluster munitions is growing rapidly. Norway's announcement on November 16, 2006 of its intention to facilitate a process aimed at the negotiation of a new international treaty prohibiting cluster munitions that cause unacceptable harm to civilians is an extremely important development in this process. Belgium became the first country to ban cluster munitions in February 2006.¹ Norway announced a moratorium on the weapon in June and, five months later, extended it until a new treaty is negotiated.

Israel's use of cluster munitions in Lebanon helped push the already growing movement forward. "The case of Lebanon clearly demonstrates that there is a real need to strengthen humanitarian law in this area. In the Government's view, the human suffering caused by the use of cluster munitions is unacceptable. This is why Norway will take the lead—together with other like-minded countries and

¹ The law passed by Parliament in February entered into force on June 9, 2006.

international humanitarian actors—to put in place an international prohibition against cluster munitions,” Norway’s foreign minister said in October.²

The momentum against cluster munitions increased greatly during the Third Review Conference of the Convention on Conventional Weapons (CCW) held in Geneva from November 7-17, 2006. On the first day of the review conference, UN Secretary-General Kofi Annan issued a statement calling for a “freeze” on the use of cluster munitions in populated areas and the destruction of “inaccurate and unreliable” cluster munitions.³ The International Committee of the Red Cross (ICRC) called on states not only “to immediately end the use of inaccurate and unreliable cluster munitions,” but also to destroy their stocks of such weapons. The ICRC also indicated its intention to hold an expert meeting in early 2007 aimed at identifying the elements a treaty on cluster munitions would need.⁴

By the end of the Review Conference, nearly 30 states had expressed support for a proposal for a mandate to begin negotiations in the CCW on a “legally-binding instrument that addresses the humanitarian concerns posed by cluster munitions” (Appendix I).⁵ However, the proposal was rejected by a number of other states, including China, Russia, the United Kingdom, and the United States, in favor of a weak mandate to continue discussions on explosive remnants of war, with a focus on cluster munitions (Appendix II).⁶ The anti-cluster munition states issued a declaration on the final day of the Review Conference calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards

² Minister of Foreign Affairs Jonas Gahr Støre, Norwegian Ministry of Foreign Affairs, “Minister of Foreign Affairs Reply to Olav Akselsen’s (Labour Party) question regarding the war in Lebanon and the use of cluster munitions,” October 24, 2006, http://www.odin.dep.no/ud/english/news/speeches/minister_a/_032171-090682/dok-bu.html (accessed October 25, 2006).

³ UN Secretary-General Kofi Annan, Message to the Third Review Conference of the Convention on Conventional Weapons (CCW), Geneva, November 7, 2006.

⁴ International Committee of the Red Cross (ICRC), Statement of Dr. Philip Spoerri to the Third Review Conference of the CCW, Geneva, November 7, 2006.

⁵ “Proposal for a Mandate to Negotiate a Legally-Binding Instrument that Addresses the Humanitarian Concerns Posed by Cluster Munitions,” presented by Austria, Holy See, Ireland, Mexico, New Zealand, and Sweden, CCW/CONF.III/WP.1, October 6, 2006. The proposal was also formally supported by Argentina, Bosnia and Herzegovina, Chile, Costa Rica, Czech Republic, Denmark, Germany, Guatemala, Hungary, Italy, Liechtenstein, Lithuania, Luxembourg, Malta, Peru, Portugal, Serbia, Slovakia, Slovenia, and Switzerland.

⁶ “Proposal for a Mandate on Explosive Remnants of War,” presented by the United Kingdom, CCW/CONF.III/WP.15, November 15, 2006.

because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions (Appendix III).⁷ Norway then announced it would start an independent process outside the CCW to negotiate a treaty banning cluster munitions that cause unacceptable humanitarian harm. It subsequently indicated it will hold the first meeting in the process on February 22-23, 2007 (Appendix IV).

National Initiatives

Parliamentary initiatives to prohibit or restrict cluster munitions are underway in numerous countries. In October 2004, the European Parliament adopted a resolution calling for an immediate moratorium on the use, production, and transfer of cluster munitions until an international agreement has been negotiated on their regulation or prohibition. More recently, Austria’s parliament passed a resolution calling for a prohibition on cluster munitions with high failure rates and urging the Austrian government to support international negotiations on cluster munitions on July 12, 2006. In August 2006, Germany announced that it would not procure any new cluster munitions, would cease using the two types of cluster munitions in its arsenal with dud rates higher than 1 percent, and would examine whether its existing cluster munitions could be replaced entirely by an alternative weapon. The German parliament passed a resolution effecting these changes on September 28, 2006. Several weeks later, on October 12, the parliament of Luxembourg adopted a motion calling on the government to join international initiatives to ban cluster munitions and to elaborate a law banning cluster munitions. There are parliamentary initiatives to restrict or prohibit cluster munitions in Denmark, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Many countries have in recent years decided to remove from service and/or destroy cluster munitions with high failure rates, and some have called for a prohibition on use in populated areas. Argentina, Denmark, Germany, Norway, Switzerland, and the United States, among others, have announced they will not procure cluster

⁷ “Declaration on Cluster Munitions,” presented by Austria, Belgium, Bosnia and Herzegovina, Costa Rica, Croatia, Czech Republic, Denmark, Germany, Holy See, Hungary, Ireland, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, New Zealand, Norway, Peru, Portugal, Serbia, Slovakia, Slovenia, Sweden, and Switzerland, CCW/CONF.III/WP.18, November 17, 2006.

munitions in the future with a failure rate greater than 1 percent; Poland and South Africa have said they will establish minimum reliability rates. A growing number of countries have removed from service and destroyed, or are in the process of destroying, inaccurate and unreliable cluster munitions, including Argentina (Rockeye, BLG-66 Belouga), Australia (Rockeye), Belgium (BL-755), Canada (Rockeye), Denmark (Rockeye, 155mm ICM, 155mm ICM [Base Bleed]), France (BLG-66 Belouga), Germany (BL-755, DM-602, DM-612), Netherlands (BL-755, M26 MLRS, M483A1), Norway (Rockeye), Portugal (BL-755), Switzerland (BL-755), and the United Kingdom (M483).

International Humanitarian Law

At the December 2001 Review Conference of the CCW, states parties established a Group of Governmental Experts to discuss ways that states parties could minimize the humanitarian consequences of explosive remnants of war (ERW). As a result of that process, on November 28, 2003, state parties adopted Protocol V, which lays out post-conflict remedial responsibilities and recommends a series of best practice preventive measures for decreasing ERW. Protocol V entered into force November 12, 2006 almost three years after its adoption.⁸ Regrettably, the protocol covers only post-conflict measures. Delegates opted not to negotiate on “preventive measures,” such as technical improvements or use restrictions, or specific weapons systems, such as cluster munitions.

In 2004 and 2005, a Working Group on ERW had a mandate to continue discussions on preventive measures that might reduce the humanitarian consequences of ERW. In March 2005, members of the CCW Working Group on ERW issued a questionnaire to states parties regarding ERW and international humanitarian law (IHL).⁹ Only a few

⁸ As of February 16, 2007, there were 30 states party to CCW Protocol V: Albania, Australia, Bulgaria, Croatia, Czech Republic, Denmark, El Salvador, Estonia, Finland, France, Germany, Holy See, Hungary, India, Ireland, Liberia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Nicaragua, Norway, Sierra Leone, Slovakia, Spain, Sweden, Switzerland, Tajikistan, and Ukraine.

⁹ Group of Governmental Experts, Working Group on Explosive Remnants of War, “International Humanitarian Law and ERW,” CCW/GGE/X/WG.1/WP.2, March 8, 2005. The questionnaire was prepared by Australia, Canada, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States, in consultation with the ICRC. The questionnaire was designed to gather information on: (1) which principles of IHL are considered applicable to the use of munitions that may become ERW, in particular submunitions, and (2) how states implement these principles. As envisioned by the Working Group Coordinator, this information was to be the basis for an examination of the adequacy of national implementation mechanisms as required by IHL, and help states determine whether any future measures are required.

states used this opportunity to articulate their approach to applying IHL principles specifically to cluster munition use, but the IHL survey process did highlight that practice among states is inconsistent.

Norway argued that cluster munition use raises problems under the Geneva Conventions Additional Protocol I Article 51(5)(2) prohibition on indiscriminate bombardments, and, given the wide dispersal pattern, under the Article 51(4) limitations on attacking military targets near civilian areas. It also argued that “the use of cluster munitions, due to their high number of submunitions, their wide dispersal, and, in many cases, their high dud rate” may pose problems under the proportionality test.¹⁰

Both Norway and Brazil suggested that high-altitude aerial bombardment using cluster munitions violates the rule of distinction.¹¹ Switzerland warned that the use of cluster munitions, especially those with a high dud rate, in populated areas may violate the rule of distinction.¹² Ireland said that the rule of discrimination is particularly applicable to submunitions “because when employed against military targets, their wide footprint may strike civilian personnel and objects close to a military objective.”¹³ It also said that military necessity limits the use of all munitions including submunitions.¹⁴

Finally, Mexico, too, commented on military necessity, saying “[T]he *principle of protection of the civilian population* is considered to be important, since Mexico considers that no military necessity can justify injury to, aggression against or

¹⁰ Response from Norway, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.5, July 29, 2005, p. 4.

¹¹ Ibid., p. 7; Response from Brazil, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.1, September 12, 2005, p. 2.

¹² Response from Switzerland, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.13, August 3, 2005, p. 3.

¹³ Response from Ireland, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XIII/WG.1/WP.3, February 10, 2006, p. 2.

¹⁴ Ibid.

attacks on the civilian population, especially in the specific case of submunitions which cause unnecessary injury or incidental damage.”¹⁵

Several states reported on measures they had taken to prevent harm to civilians from cluster munition use, including such steps as prohibiting or restricting use in populated areas and setting maximum dud (failure) rates. Although not mentioning cluster munitions specifically, the Czech Republic emphasized the significance of training to minimize the humanitarian risks of ERW.¹⁶ Lithuania noted that it does not possess or plan to possess cluster munitions.¹⁷

A couple of states commented generally on the dangers of cluster munitions. Mexico, for example, said in addition to being dangerous for soldiers, submunitions “owing to the scale of their target and the degree of error when they explode...constitute a permanent hazard as long as they are not replaced by another type of weapon with no impact on the civilian population.”¹⁸ Croatia noted twice that “unexploded submunitions may easily become unexploded remnants of war.”¹⁹

In contrast, Poland argued that the percentage of unexploded submunitions at present is “negligible,”²⁰ and any IHL problems arising from cluster munitions are already addressed by the CCW.²¹ Russia maintained that only old cluster munitions pose a threat to humanitarian law and that any other IHL concerns are

¹⁵ Response of Mexico, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.5, February 10, 2006, p. 2.

¹⁶ Response from Czech Republic, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.2, February 10, 2006, pp. 2-3.

¹⁷ Response from Lithuania, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.10, November 22, 2005, p. 2.

¹⁸ Response of Mexico, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005.”

¹⁹ Response from Croatia, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.7, November 11, 2005, p. 2.

²⁰ “[T]he use of submunitions constitutes no breach of the ‘principle of distinction’... the number of such submunitions (potential explosive remnants of war)...constitutes a negligible percentage of the submunitions used in military operations (according to estimates 1.0% - 1.5% of such mechanisms will fail).” Response from Poland, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.3, July 4, 2005, pp. 1-2.

²¹ “[A]ll questions linked to [limiting] humanitarian problems resulting from...submunitions, becoming explosive remnants of war, have to all practical purposes been solved by [CCW Protocol V].” Ibid., p. 3.

“mythological” in nature.²² Italy calls the use of cluster munitions within the bounds of IHL a “right.”²³ These assertions are at odds with the documented harm to civilians caused by cluster munition use in the recent conflicts in Iraq, Afghanistan, and elsewhere.²⁴

III. Timeline of Cluster Munition Use

Cluster munitions have been used in at least 23 countries by at least 13 states. Non-state armed groups (NSAG) have also used cluster munitions in a limited number of cases, most recently by Hezbollah into Israel in July and August 2006.²⁵ A timeline of cluster munition use is presented below.²⁶

Date	Location	Details
1943	USSR	Soviet forces use air-dropped cluster munitions against German armor. German forces use SD-1 and SD-2 butterfly bombs against artillery positions on the Kursk salient.
1943	United Kingdom	German aircraft drop over 1,000 SD-2 butterfly bombs on the port of Grimsby.
1960s-1970s	Cambodia, Laos, Vietnam	US forces make extensive use of cluster munitions in bombing campaigns. The ICRC estimates that in Laos alone, 9 to 27 million unexploded submunitions remain. An estimate based on US military databases states that 9,500 sorties in Cambodia delivered up to 87,000 air-dropped cluster munitions.
1973	Syria	Israel uses air-dropped cluster munitions against NSAG training camps near Damascus.
1975-1988	Western Sahara	Moroccan forces use cluster munitions against NSAG.
1978	Lebanon	Israel uses cluster munitions in southern Lebanon.
1979-1989	Afghanistan	Soviet forces use air-dropped and rocket-delivered cluster munitions. NSAG also use rocket-delivered cluster munitions on a smaller scale.
1982	Lebanon	Israel uses cluster munitions against Syrian forces and NSAG in Lebanon.

²² Russian Federation Presentation, “Cluster Weapons: Real or Mythical Threat,” to the Eleventh Session of the CCW Group of Government Experts (GGE), Geneva, August 2-12, 2005.

²³ Response from Italy, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XIII/WG.1/WP.1, February 10, 2006, p. 1.

²⁴ See Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: Human Rights Watch, 2003), <http://www.hrw.org/reports/2003/usa1203/>; Human Rights Watch, *Fatally Flawed: Cluster Bombs and Their Use by the United States in Afghanistan*, vol. 14, no. 7(G), December 2002, <http://hrw.org/reports/2002/us-afghanistan/>.

²⁵ “Lebanon/Israel: Hezbollah Hit Israel with Cluster Munitions During Conflict,” Human Rights Watch news release, October 19, 2006, <http://hrw.org/english/docs/2006/10/18/lebanon14412.htm>.

²⁶ In addition, unconfirmed reports cite use of cluster munitions in Angola, Colombia, Kashmir, Nagorno-Karabakh, Pakistan, Sri Lanka, Turkey, and Yemen.

Date	Location	Details
1982	Falkland Islands (Malvinas)	UK aircraft drop cluster munitions on Argentinean infantry positions near Port Stanley, Port Howard, and Goose Green.
1986	Chad	French air forces air-drop cluster munitions on a Libyan airfield at Wadi Doum.
1991	Iraq, Kuwait, Saudi Arabia	The US and its allies (France, Saudi Arabia, UK) drop 61,000 cluster bombs, containing some 20 million submunitions. The number of cluster munitions delivered by surface-launched artillery and rocket systems is not known, but an estimated 30 million or more DPICM submunitions were used in the conflict.
1992-1995	Bosnia and Herzegovina	Forces of Yugoslavia and NSAG use available stocks of cluster munitions during civil war.
1992-1997	Tajikistan	Use by unknown forces in civil war.
1994-1996	Chechnya	Russian forces use cluster munitions against NSAG.
1995	Croatia	On May 2-3, 1995, an NSAG uses Orkan M-87 multiple rocket launchers to attack civilians in Zagreb. Additionally, the Croatian government claimed that Serb forces used BL-755 bombs.
1996-1999	Sudan	Sudanese government forces use air-dropped cluster munitions in southern Sudan.
1997	Sierra Leone	Nigerian ECOMOG peacekeepers use BLG-66 Belouga bombs on the town of Kenema.
1998	Ethiopia / Eritrea	Ethiopia attacks Asmara airport and targets in Gash-Barka province (the latter with BL-755 cluster bombs). Eritrea attacks Mekele airport.
1998-1999	Albania	Yugoslav forces conduct cross-border rocket attacks. NATO carries out six aerial cluster munition strikes.
1999	Yugoslavia (including Kosovo)	The US, UK, and Netherlands drop 1,765 cluster bombs, containing 295,000 bomblets.
2001-2002	Afghanistan	The US drops 1,228 cluster bombs containing 248,056 bomblets.
2003	Iraq	The US and UK use nearly 13,000 cluster munitions, containing an estimated 1.8 to 2 million submunitions in the three weeks of major combat.
2006	Lebanon	Israeli forces use surface-launched and air-dropped cluster munitions against Hezbollah. The UN estimates that Israel used up to 4 million submunitions.
2006	Israel	Hezbollah fires over 100 Chinese-produced Type-81 122mm cluster munition rockets into northern Israel.

Table 1: Timeline of Cluster Munition Use

IV. Cluster Munition Country Profiles

The following section characterizes and documents the national policy and practice for countries that stockpile cluster munitions. It also highlights cluster munition production, use, and transfers, as well as any statements on the applicability of existing international humanitarian law to cluster munition use. It indicates whether the country has ratified CCW Protocol V on Explosive Remnants of War.

The information contained herein reflects the best publicly available information known to Human Rights Watch.²⁷ However, there is still much that is unknown or uncertain regarding cluster munitions worldwide, and Human Rights Watch welcomes comments or corrections.

Information regarding the complete composition of any country's stockpile of cluster munitions is generally not publicly available, nor is there any transparency requirement for such data in any international treaty or agreement.²⁸ The information set forth in this briefing paper is likely incomplete, particularly regarding non-Western weapon systems, which are not well accounted for in standard international reference publications.

In some cases, Human Rights Watch has decided to exclude certain weapons and countries from this report because of this uncertainty. The best example of this exclusion is the 122mm BM-21 Grad multiple launch rocket. At least 65 countries possess this weapon and at least 15 countries produce warheads for the rockets.²⁹ At

²⁷ Human Rights Watch is grateful to Pax Christi Netherlands, Landmine Action, Handicap International, and Norwegian People's Aid for their contributions of primary source research materials used in this survey.

²⁸ Landmines, both antipersonnel and antivehicle, are addressed only tangentially in this briefing paper despite the fact that mines delivered by projectiles, bombs, and rockets are a type of cluster munition. Other international treaties address landmines.

²⁹ The following 65 countries possess 122mm rockets: Afghanistan, Algeria, Angola, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Burundi, Cambodia, Cameroon, China, Congo, DR Congo, Croatia, Cuba, Cyprus, Czech Republic, Ecuador, Egypt, Eritrea, Ethiopia, Georgia, Greece, Hungary, India, Iran, Israel, Kazakhstan, North Korea, Kyrgyzstan, Lebanon, Libya, Macedonia, Mali, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nicaragua, Nigeria, Pakistan, Peru, Poland, Romania, Russia, Rwanda, Slovakia, Sri Lanka, Sudan, Syria, Tajikistan, Tanzania, Turkey, Turkmenistan, Uganda, Ukraine, the United Arab Emirates, Uruguay, Uzbekistan, Vietnam, Yemen, Zambia, and Zimbabwe. It is not known how many of these have cluster munition warheads.

least six of these countries—China, Egypt, Russia, Slovakia, Sudan, and the United Arab Emirates—possess 122mm cluster munition rockets. There are nine different 122mm cluster munition rockets manufactured by five different countries (China, Egypt, Italy, Russia, and Slovakia).³⁰ Hezbollah fired over 100 Chinese-produced Type-81 122mm cluster munition rockets into northern Israel during the July-August 2006 conflict.³¹

Algeria

The People's Democratic Republic of Algeria is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group notes that KMG-U dispensers are in service for its aircraft.³² A media source reported that in 1999 Russia supplied *Smerch* 300mm surface-to-surface rockets to Algeria but it is not known if these included versions with submunition payloads.³³

Angola

The Republic of Angola is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group notes that KMG-U dispensers are in service for its aircraft.³⁴ Deminers operating in Angola have documented the presence of casings of RBK 250-275 cluster bombs among abandoned ammunition, although there are no reports of the presence of associated submunitions.³⁵

Argentina

The Argentine Republic is party to CCW but has yet to ratify Protocol V. Argentina was one of the CCW states parties that supported a mandate to negotiate a legally-

³⁰ Human Rights Watch, *Questions and Answers: 122mm cluster munition rockets*, October 18, 2006, <http://www.hrw.org/doc/?t=arms>.

³¹ "Lebanon/Israel: Hezbollah Hit Israel with Cluster Munitions During Conflict," Human Rights Watch news release.

³² *Jane's Air Launched Weapons*, Robert Hewson, ed. (Surrey, UK: Jane's Information Group Limited, 2004), p. 835.

³³ "Russian Plant Supplies Multiple Rocket Launchers to Algeria," Interfax News Agency, August 17, 1999.

³⁴ *Jane's Air Launched Weapons*, p. 835.

³⁵ Landmine Action, "Note on Cluster Munitions in Angola," February 10, 2004.

binding international instrument to address the problems posed by cluster munitions.

Argentina produces artillery-delivered and air-dropped cluster munitions. The Centro de Investigaciones Técnicas y Científicas de las Fuerzas Armadas (CITEFA) developed and produces the CME 155mm artillery projectile which contains 63 Dual Purpose Improved Conventional Munition (DPICM) grenades equipped with a backup pyrotechnic self-destruct mechanism. The Dirección General de Investigación y Desarrollo (DIGID) developed the FAS family of cluster bombs.³⁶ Scientific and research organizations in Argentina have also studied the feasibility of incorporating submunitions into Pampero 105mm and SAPBA 127mm surface-to-surface rockets.³⁷ Additionally, Jane's Information Group claims that numerous types of cluster bombs of foreign origin are in service with its air forces: Belouga (France), BME-330 (Spain), Rockeye (US), TAL-1 and TAL-2 (Israel).³⁸

Military officials informed Human Rights Watch in September 2006 that stocks of BLG-66 Belouga and Rockeye air-dropped bombs were destroyed by 2005.

Australia

The Commonwealth of Australia is party to CCW and ratified Protocol V on January 4, 2007. According to the Department of Foreign Affairs and Trade, "Australia has not developed, produced or used cluster munitions, and does not currently develop, produce or use them."³⁹ Jane's Information Group lists Australia as possessing Rockeye cluster bombs but Ministry of Defence officials state that these weapons were removed from the inventory of the Australian Defence Forces many years ago.⁴⁰

³⁶ Centro de Investigaciones Técnicas y Científicas de las Fuerzas Armadas, "Informe Referido a Empleo de Submuniciones," undated, provided to Pax Christi Netherlands by the Permanent Mission of Argentina to the UN in Geneva, June 14, 2005.

³⁷ Ibid.

³⁸ *Jane's Air Launched Weapons*, p. 835.

³⁹ Letter from Peter Shannon, assistant secretary, Arms Control and Counter-Proliferation Branch, Department of Foreign Affairs and Trade, to Pax Christi Netherlands, February 25, 2005.

⁴⁰ *Jane's Air Launched Weapons*, p. 835; Human Rights Watch interview with members of Australia's delegation to the Eleventh Session of the CCW GGE, Geneva, August 10, 2005.

The Australian Senate passed a motion in 2003 calling for a moratorium on use of cluster munitions, and in early 2007, the Senate was considering the “Cluster Munitions (Prohibition) Bill 2006”—which would prohibit the use, possession, and manufacture of cluster munitions. During the CCW Review Conference in November 2006, Australia did not support either the proposed mandate or the declaration in favor of a new international instrument on cluster munitions.

Austria

The Republic of Austria is party to CCW but has yet to ratify Protocol V. In July 2006 the Parliament adopted a resolution calling for a prohibition on the use of cluster munitions with high failure rates and for new international regulations. In January 2007 while pledging “full support” for the Norwegian-led initiative, Foreign Minister Ursula Plassnik stated, “We aim at effective regulations to provide better protection for the civilian population. As a first step there is a need above all to ban cluster munitions posing an unacceptably high risk for people. Our long-term objective should be a total ban of these munitions, which even years after the cessation of conflicts kill and maim human beings.”⁴¹

Austria was one of the CCW states parties that supported a mandate to negotiate a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.⁴²

In regard to the applicability of existing IHL to cluster munition use, Austria has argued that “the use of munitions/submunitions with a[n] unacceptably high dud-rate could be seen as covered by Article 51 (4) Additional Protocol I and hence

⁴¹ “Plassnik: Austria calls for international treaty on cluster munitions,” German Federal Ministry of Foreign Affairs press release, January 26, 2007, http://www.bmaa.gv.at/view.php3?f_id=124333&LNG=en&version=text (accessed February 15, 2007).

⁴² “Declaration on Cluster Munitions,” CCW/CONF.III/WP.18, November 17, 2006.

illegal.”⁴³ It did not specify what dud rate might be considered “unacceptably high.” Austria has imported two types of 155mm artillery projectiles (DM-642, DM-652) containing DPICM grenades equipped with back-up self-destruct fuzes.⁴⁴

Azerbaijan

The Republic of Azerbaijan is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Azerbaijan inherited cluster munitions from the Soviet Union. Jane’s Information Group reports that RBK series cluster bombs are in service with the country’s air force.⁴⁵ Cluster munitions are among the abandoned Soviet-era ammunition stockpiles located near the village of Saloglu in the northwestern part of the country.⁴⁶

Bahrain

The Kingdom of Bahrain is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Bahrain is not known to produce cluster munitions but has received significant exports from the United States. The US transferred 30,000 artillery projectiles (M509A1, M449A1, M483) containing 5.06 million DPICM submunitions to Bahrain between 1995 and 2001 as this type of ammunition was being phased out of the US inventory.⁴⁷ The US has also provided M26 rockets and ATACMS-1 missiles with submunition payloads to Bahrain for its MLRS launchers. Bahrain purchased 151 MLRS extended range rocket pods (six missiles per pod) in 1996, 55 rocket pods in 1997, and 57 rocket pods in 2003.⁴⁸

⁴³ Response from Austria, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.14, August 4, 2005, p. 2.

⁴⁴ Email communication from Colonel Monsberger, Ministry of Defence, to Pax Christi Netherlands, January 14, 2005.

⁴⁵ *Jane’s Air Launched Weapons*, p. 835.

⁴⁶ Human Rights Watch field visit to Saloglu, May 2005.

⁴⁷ US Defense Security Cooperation Agency, Department of Defense, “Excess Defense Article database,” undated, <http://www.dsca.osd.mil/programs/eda/search.asp> (accessed November 28, 2006).

⁴⁸ US Department of Defense, “Memorandum for Correspondents No. 091-M,” May 10, 1996; “Bahrain Purchases Lockheed Martin’s Multiple Launch Rocket System Extended-Range Rockets,” Lockheed Martin Corporation press release, December 20, 2003.

Belarus

The Republic of Belarus is party to CCW but has yet to ratify Protocol V. Belarus inherited a stockpile of cluster munitions from the Soviet Union. Jane's Information Group reports that RBK-500 cluster bombs are in service with the country's air force.⁴⁹ Belarus also possesses *Uragan* 220mm and *Smerch* 300mm surface-to-surface rockets, but it is not known if these include versions with submunition payloads.

Belgium

Legislation banning cluster munition was adopted by the Belgian Parliament in 2006 and the law entered into force on June 9, 2006 after publication in the official gazette. It is part of a broader law "regulating economic and individual activities with weapons."⁵⁰ In addition, the law requires that, "Within three years after the publication of the law, the State and public administrations destroy the existing stock of submunitions or devices of similar nature."⁵¹

The Kingdom of Belgium is party to CCW but has yet to ratify Protocol V. It has stated its desire for "negotiations to start as soon as possible in order to determine, on the multilateral level, an effective and inclusive response...to the unacceptable consequences that result from the use of this type of weapon."⁵² It was among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions "within concentrations of civilians," prohibit the use of cluster munitions that "pose serious humanitarian hazards because they are for example unreliable and/or inaccurate," and require destruction of stockpiles of such cluster munitions.⁵³

⁴⁹ *Jane's Air Launched Weapons*, p. 836.

⁵⁰ "Loi réglant des activités économiques et individuelles avec des armes," *Le Moniteur Belge*, June 9, 2006, <http://www.ejustice.just.fgov.be/cgi/welcome.pl> (accessed June 9, 2006).

⁵¹ *Ibid.*

⁵² Statement by the Delegation of Belgium to the Third Review Conference of the CCW, Geneva, September 8, 2006. Unofficial translation.

⁵³ "Declaration on Cluster Munitions," November 17, 2006.

Cluster munitions were at one time developed or produced by companies in Belgium. The Poudreries Reunies de Belgique (PRB), now defunct, manufactured the NR 269 155mm DPICM artillery projectile prior to 1990; this production was reportedly assumed by Giat Industries in France.⁵⁴ Mecar SA at one point developed a mortar bomb containing submunitions but claims that this project never reached production status due to economic reasons. Similarly, Forges de Zeebrugge (FZ) claims that “a project for a rocket containing nine submunitions with no self-destruct system existed in the 1980s. This product did not go further than a prototype.”⁵⁵ However, FZ stated in December 2005 that a new rocket system, the FZ-101 is under development: “Around 2000, FZ, in competition with General Dynamics and the Canadian firm Bristol, succeeded in obtaining a contract for the addition of its rocket system to Germany’s Tiger attack helicopter and subsequently a contract to manufacture a guided warhead equipped with 8 submunitions with an overall reliability rate of 99%.”⁵⁶

Belgium continues to stockpile one type of cluster munition, but is developing a program for its destruction in 2006.⁵⁷ This munition is possibly the NR 269 projectile noted above or similar models produced by the US. Belgium has destroyed its stockpile of BL-755 cluster bombs.⁵⁸

Bosnia and Herzegovina

Bosnia and Herzegovina is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy, but was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of

⁵⁴ *Jane’s Ammunition Handbook*, Terry J. Gander and Charles Q. Cutshaw, eds. (Surry, UK: Jane’s Information Group Limited, 2001), p. 353.

⁵⁵ Testimony presented by the Belgian Security and Defence Industry ASBL/VZW to the Belgian Parliament, December 19, 2005, p. 3. Facsimile to Human Rights Watch, January 3, 2006.

⁵⁶ *Ibid.*, p. 6.

⁵⁷ Statement of Colonel Valentin to the Belgian Parliament, December 19, 2005.

⁵⁸ On May 25, 2005, the Minister of Defense said to the Commission of National Defense of the House of Representatives that “Belgium took the initiative to take out of use and later on to destroy one category of this munition, the air-dropped BL-755.” See Belgium House of Representatives, <http://www.lachambre.be/doc/CCRI/html/51/IC616.html#6889> and Belgium Senate, http://www.senate.be/www/webdriver?Mival=index_senate&M=1&LANG=fr (accessed November 28, 2006).

the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.⁵⁹

The entity armies in the Federation inherited cluster munitions during the breakup of the Socialist Federal Republic of Yugoslavia. Forces of Yugoslavia and non-state armed groups (NSAG) used available stocks of cluster munitions during the 1992-1995 civil war. Jane’s Information Group lists forces as possessing KPT-150 dispensers for aircraft, M77 Oganj 128mm rockets (containing 40 KB-1 DPICM grenades), and M87 Orkan 262mm rockets (containing 288 KB-1 DPICM grenades).⁶⁰

Brazil

The Federative Republic of Brazil is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. During the debate at the UN Human Rights Council’s Commission of Inquiry on Lebanon on December 1, 2006, Brazil supported all the recommendations of the Commission’s report but gave special attention to cluster munitions by highlighting and reading aloud during its statement the recommendation that “the Human Rights Council should take the initiative to promote urgent action to include cluster munitions to the list of weapons banned under international law.”⁶¹

In regard to the applicability of existing IHL to cluster munition use, Brazil has noted that high-altitude aerial bombardment using cluster munitions violates the principle of distinction.⁶² It also noted that cluster munition use should be limited depending on “weather conditions and terrain characteristics” and that “cluster bombs or submunition dispensers should not be released or launched from high altitudes”

⁵⁹ “Declaration on Cluster Munitions,” November 17, 2006.

⁶⁰ *Jane’s Air Launched Weapons*, p. 836; *Jane’s Ammunition Handbook*, pp. 633, 637.

⁶¹ Statement by Sergio Abreine Lima Florencio to the UN Human Rights Council’s Commission of Inquiry on Lebanon, Geneva, December 1, 2006.

⁶² Response from Brazil, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XII/WG.1/WP.1, September 12, 2005, p. 2.

because the wide dispersal pattern is likely to “generat[e] greater risk of unnecessary harm to civilians.”⁶³

Three companies produce cluster munitions in Brazil. Avibras Aeroespacial SA and Britainite Industrias Químicas produce the ASTROS family of surface-to-surface rockets with submunition warheads. These weapons have been exported to Iran, Iraq, and Saudi Arabia.⁶⁴ Target Engenharia et Comércio Ltda. produces two types of cluster bombs (BLG-120, BLG-252) for the Brazilian Air Force and reportedly for export.⁶⁵

Bulgaria

The Republic of Bulgaria is party to CCW and ratified Protocol V on November 7, 2005. It has not made a public declaration of its cluster munition stockpiles or policy. It is a producer of cluster munitions. The Vazov Engineering Plants are associated with the production of 122mm rockets, which include variants that contain submunitions.⁶⁶ Jane’s Information Group lists Bulgaria as possessing 122mm rockets (with 15 DPICM grenades) and RBK-500 cluster bombs.⁶⁷

Canada

Canada is party to CCW but has yet to ratify Protocol V. It has produced cluster munitions. Bristol Aerospace Limited lists among its products a version of the CRV-7 70mm unguided air-to-surface rocket containing nine M73 submunitions.⁶⁸ Canadian Forces possess M483A1 155mm artillery projectiles containing 88 M42/M46 DPICM grenades.⁶⁹ The future status of the M483A1 projectiles is currently under review.⁷⁰

⁶³ *Ibid.*, p. 3.

⁶⁴ *Jane’s Ammunition Handbook*, pp. 630-631; Jonathan Beaty and S.C. Gwynne, “Scandals: Not Just a Bank You can get anything you want through B.C.C.I. -- guns, planes, even nuclear-weapons technology,” *Time Magazine*, September 2, 1991.

⁶⁵ Brazilian Association of the Industries of Defense Materials and Security (ABIMDE), “Product List 2000 to December 2005,” undated, <http://abimde.com.br/declaracoesprodutos.htm> (accessed January 5, 2006).

⁶⁶ *Jane’s Ammunition Handbook*, p. 625.

⁶⁷ *Ibid.*; *Jane’s Air Launched Weapons*, p. 836.

⁶⁸ Bristol Aerospace Limited, “CRV7 Rocket System: Warheads,” undated, <http://www.bristol.ca/Warheads.html> (accessed January 5, 2006). Bristol, located in Winnipeg, Manitoba, is a subsidiary of Magellan Aerospace.

⁶⁹ Facsimile from Ann Pollack, counsellor, Canadian Delegation to the Conference on Disarmament, Geneva, to Pax Christi Netherlands, January 13, 2005.

During the CCW Review Conference in November 2006, Canada did not support either the proposed mandate or the declaration in favor of a new international instrument on cluster munitions. In February 2007, Minister of Foreign Affairs Peter MacKay wrote that “Canada is deeply concerned about the humanitarian effects as well as the negative impact upon development of certain types of cluster munitions, namely those having very high failure rates.”⁷¹ He also noted that “Canada has no plans to use or transfer current holdings of cluster munitions and the Department of National Defence has stated its intent that any future procurement of cluster munitions would demand very high reliability rates.... Canada has destroyed its holdings of Mk 20 Rockeye bombs and is considering the way ahead with regard to remaining holdings.”⁷²

Chile

The Republic of Chile is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy, but was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. Chile produces and has exported cluster munitions. Industrias Cardeon SA and Los Conquistadores 1700 produce at least eight types of air-dropped cluster bombs.⁷³ The PM-1 combined effects submunitions delivered by bombs produced in Chile have been used in Eritrea, Ethiopia, Iraq, and Sudan.⁷⁴ Ferrimar is reported to have developed a submunition warhead for its Rayo 160mm surface-to-surface rocket system.⁷⁵

⁷⁰ Human Rights Watch interview with Department of National Defence Representative, name withheld, Geneva, June 20, 2006.

⁷¹ Letter from Foreign Minister Peter MacKay, Foreign Affairs and International Trade, to Mines Action Canada, February 13, 2007.

⁷² *Ibid.*

⁷³ *Jane's Air Launched Weapons*, pp. 306-311.

⁷⁴ Rae McGrath, *Cluster Bombs: The Military Effectiveness and Impact on Civilians of Cluster Munitions*, (London: Landmine Action, 2000), p. 38. The “Iraq Ordnance Identification Guide” produced by the US military documents the presence of the PM-1 submunition in Iraq. Mine Action Information Center, James Madison University, “Iraq Ordnance Identification Guide,” July 31, 2006, <http://maic.jmu.edu/research/iraqOIG.htm> (accessed February 16, 2007).

⁷⁵ *Jane's Ammunition Handbook*, p. 636.

China

The People's Republic of China is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. During the work of the CCW group of experts sessions in Geneva, China has noted that "the ERW Protocol has covered general generic preventative measures aimed at improving the reliability of munitions, which will be conducive to addressing the humanitarian problems caused by munitions, including submunitions."⁷⁶

China Northern Industries (NORINCO) produces a full range of air-dropped and surface-launched cluster munitions. China likely stockpiles significant numbers of cluster munitions. Export activity is not known, but Hezbollah fired over 100 Chinese Type-81 122mm rockets into northern Israel in July/August 2006. Submunitions from these weapons were also found in southern Lebanon by deminers after the cessation of the conflict.⁷⁷ The types of cluster munitions produced in China are listed in the following table:⁷⁸

Type	Caliber	Carrier Name	Number	Submunition Type
Projectiles	120mm	Unknown	18	DPICM
	122mm	Type-83	30	Type-81 DPICM
	130mm	Type-59	35	Type-81 DPICM
	152mm	Type-62	63	Type-81 DPICM
	152mm	Type-66	63	Type-81 DPICM
	155mm	Unknown	72	Type-81 DPICM
	203mm	Unknown	100	DPICM
Bombs		Anti-Runway	12	Unknown
		Anti-Tank	16	Unknown
		BL-755 clone	147	Unknown
		340 Kg.	189	Unknown
		Type 2	42	AP bomblets
		Type 2	26	AT bomblets
		Type 2	28	APAM

⁷⁶ Statement by Ambassador Hu Xiaodj to the Eleventh Session of the CCW GGE, Geneva, August 2, 2005.

⁷⁷ "Lebanon/Israel: Hezbollah Hit Israel with Cluster Munitions During Conflict," Human Rights Watch news release.

⁷⁸ The primary sources for information on China's cluster munitions are *Jane's Air Launched Weapons*, p. 837 and *Jane's Ammunition Handbook*. It is supplemented with information from US Defense Intelligence Agency, Department of Defense, "Improved Conventional Munitions and Selected Controlled-Fragmentation Munitions (Current and Projected) DST-1160S-020-90," June 8, 1990, partially declassified and made available to Human Rights Watch under a Freedom of Information Act request.

Type	Caliber	Carrier Name	Number	Submunition Type
Rockets	107mm	Type-63	16	Type-81 DPICM
	122mm	Type-81	39	Type-90 DPICM
	122mm	Type-90A	39	DPICM
	273mm	WM-80	320	DPICM
	320mm	WS-1B	466	DPICM

Table 2: China's Cluster Munitions

Croatia

The Republic of Croatia is party to CCW and ratified Protocol V on February 7, 2005. It has not made a public declaration of its cluster munition stockpiles or policy, but during the first week of the CCW Review Conference, indicated its support for a new international instrument on cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.⁷⁹

Croatia inherited cluster munitions during the breakup of the Socialist Federal Republic of Yugoslavia. On May 2-3, 1995, an NSAG used cluster munitions from Orkan M-87 multiple rocket launchers to attack civilians in Zagreb. Additionally, the Croatian Government claimed that Serb forces dropped BL-755 cluster bombs in Sisak, Kutina, and along the Kupa River. Jane's Information Group lists Croatian forces as possessing KMG-U dispensers for aircraft and M87 Orkan 262mm rockets, which contain 288 KB-1 DPICM grenades.⁸⁰

Cuba

The Republic of Cuba is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information

⁷⁹ “Declaration on Cluster Munitions,” November 17, 2006.

⁸⁰ *Jane's Air Launched Weapons*, p. 837; *Jane's Ammunition Handbook*, p. 641.

Group lists Cuba as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 cluster bombs.⁸¹

Czech Republic

The Czech Republic is party to CCW and ratified Protocol V on June 6, 2006. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.⁸²

According to its Ministry of Defense, “there are no cluster munitions included in the armaments of the Czech Armed Forces” and all cluster munitions “have been excluded from service.”⁸³ Prior to this statement, the status of cluster munitions stockpiles resulting from the break-up of Czechoslovakia was unclear. However, the Czech Republic has a limited number of stockpiled RBK-250, RBK-500, and KMG-U cluster munitions that are intended for “complete liquidation eventually.”⁸⁴ Contrary to previous information, the Czech Armed Forces has no stockpiles of RBK-275 bombs, PROSAB-250 bombs, AGAT/JRKK-G rockets, or TRNOVNIK rockets.⁸⁵ Only Nb 122-JROF RM-70 cargo rockets are used for GRAD multiple rocket launchers produced by Czechoslovakia.⁸⁶

⁸¹ *Jane's Air Launched Weapons*, p. 837.

⁸² “Declaration on Cluster Munitions,” November 17, 2006.

⁸³ Email communication from Jakub Cimoradsky, International Law Department, Ministry of Defense, to Human Rights Watch, August 25, 2006.

⁸⁴ *Ibid.*

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*

Denmark

The Kingdom of Denmark is party to CCW and ratified Protocol V on June 28, 2005. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.⁸⁷

In May 2004 the Danish parliament invited the government to continue to pursue “efforts in all international fora to establish as quickly as possible an internationally binding legal ban against all kinds of cluster munitions not equipped with self-destruction, self-deactivation, or self-neutralization mechanisms.”⁸⁸

Denmark provided a detailed statement on its national view of cluster munitions in August 2005 stating, “While cluster munitions can serve legitimate military purposes, it is clear that there is currently an imbalance between military necessity and the humanitarian risk posed.”⁸⁹ It has committed itself to working toward a legally binding international regulation of cluster munitions “and establishing international standards for cluster munitions...taking into account the use and design of cluster munitions with a view to limiting humanitarian suffering.”⁹⁰

In November 2004, Denmark announced that it would no longer procure or use submunitions with a failure rate of greater than 1 percent or those which are not equipped with self-destruction or self-neutralization devices.⁹¹ A temporary ban on

⁸⁷ “Declaration on Cluster Munitions,” November 17, 2006.

⁸⁸ Decision of the Folketing, Danish parliament, May 27, 2004 (unofficial translation).

⁸⁹ Statement by Denmark at the Eleventh Session of the CCW GGE, Geneva, August 4, 2005.

⁹⁰ *Ibid.*

⁹¹ Communication from the Danish Ministry of Defense, Division of International Law and Security Cooperation, to Pax Christi Netherlands, February 16, 2005.

the procurement and use of cluster munitions has been issued and there is no type of cluster munition included in the procurement plans of the armed forces.⁹²

According to the Ministry of Defense, “No cluster bombs...are in service with the Danish Armed Forces,” and “no ground-launched cluster munition is currently in service with the Danish Armed Forces.”⁹³ Denmark has retired its inventory of Rockeye⁹⁴ cluster bombs and has removed from service 155mm Improved Conventional Munition (ICM) and ICM Base Bleed (extended range) artillery projectiles.⁹⁵

Egypt

The Arab Republic of Egypt is a signatory to CCW, but has not ratified the convention. It has not made a public declaration of its cluster munition stockpiles or policy. Egypt is a producer of cluster munitions. The Helipolis Company for Chemical Industries produces cargo projectiles for 122mm, 130mm and 152mm caliber artillery pieces which contain M42D DPICM submunitions.⁹⁶ The SAKR Factory for Developed Industries is credited with developing and producing 122mm surface-launched rockets containing 72 submunitions.⁹⁷

Egypt is also a significant recipient of exports of cluster munitions, primarily from the United States. The US provided at least 760 CBU-87 cluster bombs to Egypt as part of a foreign military sales program in the early 1990s.⁹⁸ Lockheed Martin Corporation was awarded a US\$36,132,500 increment as part of a \$72,265,000 contract to

⁹² Ibid.

⁹³ Ibid.

⁹⁴ At some point between 1970 and 1995, the US supplied Denmark with 200 Rockeye cluster bombs. US Defense Security Assistance Agency, Department of Defense, “Cluster Bomb Exports under FMS, FY1970-FY1995,” November 15, 1995, obtained by Human Rights Watch in a Freedom of Information Act request, November 28, 1995.

⁹⁵ It retains a small number of Rockeye bombs for training of explosive ordnance disposal personnel. Communication from the Danish Ministry of Defense, to Pax Christi Netherlands.

⁹⁶ *Jane's Ammunition Handbook*, pp. 301-302, 315.

⁹⁷ Ibid., pp. 627-628.

⁹⁸ “Dozen + Mideast Nations Bought Weapons since Gulf War,” *Aerospace Daily*, December 10, 1991. Egypt purchased 160 CBU-87 Cluster Bombs; Barbara Starr, “Apache buy will keep Israeli edge,” *Jane's Defence Weekly*, October 1, 1992. Egypt purchased 600 CBU-87 cluster bombs.

produce 485 Extended Range MLRS rockets for Egypt in November 1991.⁹⁹ Between 1970 and 1995, the US also supplied Egypt with 1,300 Rockeye cluster bombs.¹⁰⁰ Jane's Information Group also notes that KMG-U dispensers are in service for Egypt's aircraft.¹⁰¹

Eritrea

The State of Eritrea is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Eritrean aircraft attacked the Mekele airport in Ethiopia with cluster bombs in 1998. Additionally, Ethiopia dropped BL-755 bombs in the Gash-Barka province of western Eritrea.¹⁰² Eritrea inherited Chilean manufactured CB-500 cluster bombs when it achieved independence from Ethiopia. A UN explosive ordnance disposal team in the area of Melhadega identified and destroyed a dud M20G DPICM grenade of Greek origin in October 2004.¹⁰³

Ethiopia

The Federal Democratic Republic of Ethiopia is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Ethiopian aircraft attacked the Asmara airport in Eritrea with cluster bombs in 1998, and also dropped BL-755 bombs in the Gash-Barka province of western Eritrea.¹⁰⁴ Ethiopia likely imported Chilean manufactured CB-500 cluster bombs but few details are available.

Finland

The Republic of Finland is party to CCW and ratified Protocol V on March 23, 2005. Shortly thereafter, it stated, "Defence forces are at the moment reviewing the

⁹⁹ "US Army Aviation & Missile Command Contract Announcement: DAAH01-00-C-0044," US Department of Defense press release, November 9, 2001, http://www.defenselink.mil/contracts/2001/c11092001_ct575-01.html (accessed November 28, 2006).

¹⁰⁰ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

¹⁰¹ *Jane's Air-Launched Weapons*, p. 838.

¹⁰² Mines Action Canada, *Actiongroupandmine.de*, and Landmine Action, *Explosive remnants of war and mines other than anti-personnel mines: Global Survey 2003-2004*, (London: Landmine Action, 2005), http://www.minesactioncanada.org/files/Global_impact_survey.pdf (accessed February 16, 2007), pp. 60; 64-65.

¹⁰³ UNMEE Mine Action Coordination Center, Asmara, Weekly Update, October 4, 2004, p. 4.

¹⁰⁴ Mines Action Canada, *Explosive remnants of war*, pp. 60, 64-65.

concrete measures which we need to take when the Protocol enters into force. One of the important aspects is the requirements in the technical annex, which will have an impact on our future material purchase.”¹⁰⁵

Finland acknowledges possessing one type of cluster munition, the DM-662 155mm artillery projectile which contains DPICM grenades with back-up self-destruct fuzes.¹⁰⁶ In January 2006, the Dutch Ministry of Defense announced the transfer of 18 MLRS launchers to Finland.¹⁰⁷ It was reported that 400 M26 rockets (each containing 644 M77 DPICM grenades) will be included in the sale for qualification testing and conversion into training rockets.¹⁰⁸

France

The French Republic is party to CCW and ratified Protocol V on October 31, 2006. It is a producer and exporter of cluster munitions. France used cluster munitions in Chad in 1986 and in Kuwait and Iraq in 1991.

France provided details on its national position on cluster munitions and the types of cluster munitions in current stockpiles in a working paper submitted in November 2005. It states that, “France considers that submunition weapons today remain indispensable from a military point of view.”¹⁰⁹ France maintains that it has developed a national approach to the use of cluster munitions based on “strict implementation of IHL, well adapted national concepts of use, and improvement of the reliability of all munitions, during their entire lifespan, in order to prevent them from becoming ERW.”¹¹⁰

¹⁰⁵ Email communication from Tiina Raijas, Finland Ministry of Defense, to Pax Christi Netherlands, June 8, 2005.

¹⁰⁶ Ibid.

¹⁰⁷ “Finland Receives Two MLRS Batteries,” Dutch Ministry of Defense press release, January 13, 2006, translated by Defense-aerospace.com.

¹⁰⁸ Joris Janssen, “Dutch Plan to Update Cluster Weapons,” *Jane’s Defence Weekly*, October 19, 2005.

¹⁰⁹ Permanent Mission of France to the Conference on Disarmament, “Working Paper on Submunitions,” November 15, 2005, CCW/GGE/XII/WG.1/WP.9, p.1.

¹¹⁰ Ibid.

The Armed Forces of France “deem it necessary to have submunition weapons at their disposal, as these weapons are unequalled to neutralize military objects on the ground (vehicles, machine guns, logistics facilities, etc.).”¹¹¹ Additionally, “French Armed Forces envisage using ground-to-ground submunition weapons exclusively in the context of a conflict against an enemy of the same nature, equipped with similar weapons, or likely to directly threaten the safety of French forces on the ground.”¹¹²

The four types of cluster munitions in the current stockpile of France are M26 MLRS rockets, OGR 155mm DPICM projectiles with submunitions equipped with self-destruct fuzes, BONUS 155mm sensor-fuzed weapons, and Apache missiles that deliver 10 KRISS anti-runway submunitions. It is considering replacing its M26 rockets, with its “rather unreliable submunitions,” with a rocket with a unitary warhead. France also considers that “it would be exaggerated to consider that the BONUS munition is just another type of submunition, since it does not deliver more than two submunitions at a time. Moreover, these munitions are equipped with a self-guiding system, which directs them automatically to their target during the final phase, and they are also fitted with a self-destruction mechanism.”¹¹³

French companies are active in producing cluster munitions, often as part of multinational consortia. Giat Industries and Thomson Brandt Armements produce 155mm DPICM and BONUS artillery projectiles. Matra SA, R. Alkan et Cie, and Thomson Brandt Armements are associated with the production of air-dropped cluster bombs. However, “France is not considering acquiring any other air-to-ground bombs.... Neither does it carry out any research and development in this field.”¹¹⁴ Aerospatiale and Thomson Brandt Armements participate in the production of rockets and missiles with cluster munition warheads.

The record of France’s history of cluster munition exports is incomplete. Jane’s Information Group lists exports of the BLG-66 Belouga cluster bomb to Argentina,

¹¹¹ Ibid., p.6.

¹¹² Ibid., p.2.

¹¹³ The source for the entire paragraph is Permanent Mission of France, “Working Paper on Submunitions,” pp. 2-3.

¹¹⁴ Permanent Mission of France, “Working Paper on Submunitions,” p.3.

Greece, and India.¹¹⁵ France decommissioned and destroyed its stockpile of BLG-66 Belouga cluster bombs between 1996 and 2002.¹¹⁶

Georgia

The Republic of Georgia is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. It inherited cluster munitions from the Soviet Union. Jane's Information Group reports that KMG-U dispensers and RBK-500 cluster bombs are in service with the country's air force.¹¹⁷

Germany

The Federal Republic of Germany is party to CCW and ratified Protocol V on March 3, 2005. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions "within concentrations of civilians," prohibit the use of cluster munitions that "pose serious humanitarian hazards because they are for example unreliable and/or inaccurate," and require destruction of stockpiles of such cluster munitions.¹¹⁸

The Christian Democratic Party (CDU)/Christian Social Union (CSU) and the Social Democratic Party (SPD) parliamentary groups introduced a motion in the Bundestag on the "Prohibition of Dangerous Cluster Munitions" on June 28, 2006 and this motion was adopted on September 28, 2006. The motion calls on Germany to work for "regulations that aim at achieving a high reliability for cluster munitions...and a limitation on the active life of these munitions as well as rules on their use under international law."¹¹⁹ With regard for international humanitarian law, the motion calls

¹¹⁵ *Jane's Air Launched Weapons*, pp. 835, 839, 840.

¹¹⁶ Permanent Mission of France, "Working Paper on Submunitions," p.3.

¹¹⁷ *Jane's Air Launched Weapons*, p. 838.

¹¹⁸ "Declaration on Cluster Munitions," November 17, 2006.

¹¹⁹ "Prohibition of Dangerous Cluster Munitions – Further Development of International Humanitarian Law" motion tabled by the CDU/CSU (Christian Democratic Party/Christian Social Union) and the SPD (Social Democratic Party) Parliamentary Groups, German Bundestag, Sixteenth Electoral Term, September 28, 2006.

for Germany to campaign for “a comprehensive, internationally binding and verifiable prohibition” on the production and export of all cluster munitions with dud rates over 1 percent.¹²⁰

Nationally, the motion calls upon the government to decommission all cluster munitions with a dud rate of over 1 percent that do not have self-destruct mechanisms, prohibit the production or export of cluster munitions with dud rates over 1 percent, and stop the procurement of any new cluster munitions.¹²¹ The Federal Government is to shift away from cluster munitions “towards alternative munitions” and to “examine whether...cluster munitions can be entirely replaced.”¹²² Cluster munitions are to be employed only when there are “no suitable alternative munitions.”¹²³

German stockpiles of cluster munitions include 155mm DPICM artillery projectiles (DM-642, DM-652, DM-662) containing submunitions equipped with self-destruct fuzes, DM-702 SMArt-155 sensor-fuzed munitions, M26 MLRS rockets, 110mm LARS artillery rockets, and MW-1 dispensers for aircraft which deliver an assortment of submunitions. Regarding the M26 rocket, since this “has not yet been provided with a mechanism to limit the operational phase, use of this type of munition is envisaged only after a modernization.”¹²⁴ The BL-755 air-dropped cluster munition “has continuously been phased out since the year 2001 as a consequence of its unacceptable dud rate.”¹²⁵ The motion on the “Prohibition of Dangerous Cluster Munitions” requires the Bundeswehr to immediately cease using DM-602 and DM-612 cluster munitions and cease deploying cluster munitions by the TORNADO weapon system once the aircraft is phased out of service.¹²⁶

¹²⁰ “Prohibition of Dangerous Cluster Munitions,” German Bundestag Motion, September 28, 2006.

¹²¹ *Ibid.*

¹²² *Ibid.*

¹²³ *Ibid.*

¹²⁴ Statement by Germany, “Reliability and Use of Cluster Munition with regard to Explosive Remnants of War,” to the Eleventh Session of the CCW GGE, Geneva, August 2, 2005, p. 3.

¹²⁵ *Ibid.*

¹²⁶ “Prohibition of Dangerous Cluster Munitions,” German Bundestag Motion, September 28, 2006.

German industry is active in the production and export of cluster munitions. Rheinmetall produces 155mm DPICM artillery projectiles for the German Armed Forces as well as export customers including Austria, Denmark, Finland, Greece, Italy, and Norway. A consortium of Diehl, GIWS, and Rheinmetall produce the SMArt-155 sensor-fuzed munition for the German Armed Forces and export customers Greece and Switzerland.¹²⁷ The consortium granted Alliant TechSystems in the US licensed co-production rights for the SMArt-155, and Alliant has marketed the munitions in the United Arab Emirates. According to Alliant, over 11,000 SMArt-155 have been produced by consortium members.¹²⁸

LFK and RTG Euromunition produced the MW-1 dispenser for aircraft. Buck, Daimler Benz Aerospace, Diehl, Dynamit Nobel, Krauss Maffei, Krupp Atlas Elektronik, KUKA Wehrtechnik GmbH, and Thyssen Henschel have been involved in the production of cluster munition artillery rockets for the MLRS and LARS systems.

Greece

The Hellenic Republic is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Greece is a producer and importer of cluster munitions. The Greek Powder and Cartridge Company (Pyrkal) produces 155mm DPICM artillery projectiles.¹²⁹ A UN explosive ordnance disposal team in the area of Melhadega in Eritrea identified and destroyed a dud M20G DPICM grenade of Greek origin in October 2004.¹³⁰

Greece has imported DPICM artillery projectiles and sensor-fuzed weapons from Germany and 155mm DPICM artillery projectiles, M26 MLRS rockets, and Rockeye bombs from the US. According to US export records, Greece also imported 4,008 CBU-55B cluster bombs at some point between 1970 and 1995.¹³¹ Greece is the sole

¹²⁷ "SMArt 155 – Proven Reliability and Accuracy," Rheinmetall DeTec AG press release, October 3, 2005, <http://www.rheinmetall-detec.de/index.php?lang=3&fid=3241> (accessed June 7, 2006).

¹²⁸ "ATK/GIWS SMArt 155 Sensor Fuzed Munition Succeeds in UAE Desert Tests," Alliant TechSystems press release, January 10, 2005, http://atk.mediaroom.com/index.php?s=press_releases&item=471 (accessed June 7, 2006).

¹²⁹ *Jane's Ammunition Handbook*, pp. 380-381.

¹³⁰ UNMEE Mine Action Coordination Center, Asmara, Weekly Update, October 4, 2004, p. 4.

¹³¹ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

reported customer for the Autonomous Free Flight Dispenser System (AFDS), which disperses a variety of explosive submunitions, developed by General Dynamics (US) and LFK (Germany).¹³² Jane's Information Group lists it as also possessing BLG-66 Belouga and CBU-71 cluster bombs.¹³³

Guinea

The Republic of Guinea is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Moldova reported the transfer of 860 missiles for the 220mm *Uragan* multiple launch rocket system with a submunition warhead (each containing 30 high-explosive grenades) to Guinea in 2000.¹³⁴

Guinea-Bissau

The Republic of Guinea-Bissau is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. The British NGO Landmine Action documented the presence of PTAB 2.5 bomblets and RBK series air-dropped cluster munitions in the country. The munitions were ejected by an explosion at an ammunition storage facility in Bra Barrio, located in the outskirts of Bissau City, sometime in 2000.¹³⁵

Honduras

The Republic of Honduras is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. According to US export records, Honduras imported 120 Rockeye cluster bombs at some point between 1970 and 1995.¹³⁶

¹³² *Jane's Air Launched Weapons*, pp. 365-367.

¹³³ *Ibid.*, p. 839.

¹³⁴ Submission by the Republic of Moldova, UN Register of Conventional Arms, Report for Calendar Year 2000, May 30, 2001.

¹³⁵ Email from Simon Conway, director, Landmine Action, to Human Rights Watch, October 16, 2006.

¹³⁶ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

Hungary

The Republic of Hungary is party to CCW and ratified Protocol V on November 13, 2006. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.¹³⁷

While it has not made a public declaration of its cluster munition stockpiles or policy, officials acknowledge possessing Soviet-era air-dropped bombs and state that their status is under review.¹³⁸ Jane’s Information Group lists Hungary as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 cluster bombs.¹³⁹

India

The Republic of India is party to CCW and ratified Protocol V on May 18, 2005. It has not made a public declaration of its cluster munition stockpiles or policy. The Defense Research and Development Organization of the Indian Ministry of Defence reportedly developed a cargo rocket for submunitions for the 214mm Picacha multi-barrel rocket system.¹⁴⁰ In February 2006, India bought 28 launch units for the Russian produced 300mm *Smerch* multiple launch rocket system fitted with dual-purpose and sensor-fuzed submunitions; it was the third export customer for the system.¹⁴¹ Jane’s Information Group lists India as possessing KMG-U dispensers, BL-755, BLG-66 Belouga, RBK-250, RBK-275, and RBK-500 cluster bombs.¹⁴²

¹³⁷ “Declaration on Cluster Munitions,” November 17, 2006.

¹³⁸ Human Rights Watch interview with members of Hungary’s delegation to the Fourteenth and Fifteenth Sessions of the CCW GGW, June 19, 2006 and August 31, 2006.

¹³⁹ *Jane’s Air Launched Weapons*, p. 840.

¹⁴⁰ *Jane’s Ammunition Handbook*, p. 637.

¹⁴¹ “India, Russia sign \$500 mn rocket systems deal,” Indo-Asian News Service, February 9, 2006.

¹⁴² *Jane’s Air Launched Weapons*, p. 840.

Indonesia

The Republic of Indonesia is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists it as possessing Rocky cluster bombs.¹⁴³

Iran

The Islamic Republic of Iran is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists it as possessing KMG-U dispensers, PROSAB-250, and BL-755 cluster bombs.¹⁴⁴ Media reports indicate that Iran tested in November 2006 a version of the Shahab-2 missile capable of delivering 1,400 bomblets.¹⁴⁵

Iraq

Iraq is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Cluster munitions were used in Iraq in 1991 and 2003. Prior to 2003 Iraq was active in acquiring surface-to-surface rockets with submunition payloads. This includes joint development of the M87 Orkan (known in Iraq as Ababil) with Yugoslavia.¹⁴⁶ It acquired ASTROS rockets from Brazil.¹⁴⁷ Iraq produced two types of cluster bombs called the NAAMAN-250 and NAAMAN-500.¹⁴⁸ Jane's Information Group lists it as also possessing KMG-U dispensers and CB-470, RBK-250, RBK-275, and RBK-500 cluster bombs.¹⁴⁹

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Nasser Karimi, "Iran Test-Fires New Longer-Range Missile," Associated Press, November 2, 2006.

¹⁴⁶ *Jane's Ammunition Handbook*, p. 641.

¹⁴⁷ Jonathan Beaty and S. C. Gwynne, "Scandals: Not Just a Bank You can get anything you want through B.C.C.I. -- guns, planes, even nuclear-weapons technology," *Time Magazine*, September 2, 1991.

¹⁴⁸ *Jane's Air Launched Weapons*, Issue 24, July 1996.

¹⁴⁹ Ibid., p. 840. The Iraq Ordnance Identification Guide produced for Coalition Forces also lists the Alpha submunition contained in the South African produced CB-470 as a threat present in Iraq.

Israel

The State of Israel is party to CCW but has not yet ratified Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Israel used cluster munitions in Syria in 1973 and in Lebanon in 1978, the 1980s, and in July-August 2006. Demining groups estimate that Israel used cluster munitions containing some 2.6 to 4 million submunitions during the most recent conflict in Lebanon, the majority of which were produced in the United States. Hezbollah fired over 100 Chinese-produced Type-81 122mm cluster munition rockets into northern Israel.

Israel is a major producer and exporter of cluster munitions, primarily artillery projectiles and rockets containing the M85 DPICM submunition equipped with a back-up pyrotechnic self-destruct fuze. Israel Military Industries (IMI) produces, license-produces, and exports artillery projectiles (105mm, 122mm, 130mm, 152mm, 155mm, 175mm, 203mm), mortar bombs (120mm), and rockets (EXTRA, GRADLAR, LAR-160). IMI has reportedly produced over 60 million M85 DPICM submunitions.¹⁵⁰ IMI concluded licensing agreements in 2004 with companies in India (Indian Ordnance Factories) and the United States (Alliant TechSystems) to produce DPICMs. Companies in Argentina (CITEFA), Germany (Rheinmetall), Romania (Romtecnica), and Switzerland (RAUG) have also assembled or produced these submunitions under license. Israel has also imported M26 rockets from the US for its MLRS launchers.¹⁵¹

Several types of air-dropped cluster munitions are produced by Israel. The Rafael Corporation is credited with producing the ATAP-300, ATAP-500, ATAP-1000 RAM, TAL-1, and TAL-2 cluster bombs as well as the BARAD Helicopter Submunition Dispenser.¹⁵²

¹⁵⁰ Presentation to the 48th Annual Fuze Conference by Mike Hiebel, Alliant TechSystems, and Ilan Glickman, Israel Military Industries, "Self-Destruct Fuze for M864 Projectiles and MLRS Rockets," Charlotte, North Carolina, April 27-28, 2004, Slide 9, <http://www.dtic.mil/ndia/2004fuze/hiebel.pdf> (accessed November 28, 2006).

¹⁵¹ Information on surface-launched cluster munitions produced and possessed by Israel is taken primarily from the IMI corporate website, <http://qa-imi.gsites.co.il/division.aspx?FolderID=75> (accessed November 28, 2006). It has been supplemented with information from *Jane's Ammunition Handbook* and US Defense Intelligence Agency, "Improved Conventional Munitions and Selected Controlled-Fragmentation Munitions (Current and Projected) DST-1160S-020-90."

¹⁵² *Jane's Air Launched Weapons*, pp. 370-380.

Italy

The Italian Republic is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy, but was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. On January 16, 2007, the Defence Commission of the House of Representatives voted a resolution committing the government to prohibit the use of cluster munitions by the Italian Armed Forces pending a national ban, take the necessary steps to ratify CCW Protocol V, and promote the adoption of a new protocol banning unequivocally cluster munitions.

The company Simmel Difesa SpA, based in Colleferro near Rome, at one point produced mortar bombs (81mm, 120mm) and artillery projectiles (155mm) that contain DPICM submunitions.¹⁵³ Following campaigning by the Italian Campaign to Ban Landmines, the company posted on its website a notice announcing the withdrawal of such munitions from its catalogue. The company stated that it has never produced or exported cluster munitions and gave assurances that any production would respect “existing and future legislation.”¹⁵⁴ However, one investigative reportage broadcast on satellite TV channel “Rainews24” in April 2006 showed that cluster munitions were still available through Simmel’s catalogue.¹⁵⁵

Italy also possesses M26 rockets for its MLRS launchers. Jane’s Information Group lists it as also possessing BL-755 and Rockeye cluster bombs.¹⁵⁶

Japan

Japan is party to CCW but has yet to ratify Protocol V. In 2005, it stated, “Since Japan maintains strict restriction on the use of force abroad, in light of military necessity,

¹⁵³ *Jane’s Ammunition Handbook*, pp. 476, 522, 370.

¹⁵⁴ Email communication from the Italian Campaign to Ban Landmines to Human Rights Watch, February 15, 2007.

¹⁵⁵ *Ibid.*

¹⁵⁶ *Jane’s Air Launched Weapons*, p. 841.

we do not suppose that we need to use cluster munitions outside our territory.”¹⁵⁷ Japan Self-Defense Forces “possess cluster munitions to attack and interdict vehicles such as tanks or landing crafts which deploy and move in a wide area in case of landing invasion by an adversary. From the viewpoint of Japanese military policy which is exclusively defense-oriented, we believe they are indispensable.”¹⁵⁸ Japan acknowledges stockpiling CBU-87 cluster bombs, M26 rockets for MLRS, 70mm multi-purpose submunition rockets for helicopters, and 155mm DPICM artillery projectiles. With regards to reliability, “Submunitions of cluster munitions owned by the Self-Defense Forces have a high reliability and some of them have the ability of making themselves harmless (safe) by self-destructing in case they fail to explode.”¹⁵⁹

Jordan

The Hashemite Kingdom of Jordan is party to CCW but has not ratified Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Jordan is not known to produce cluster munitions but has received significant transfers from the United States. The US transferred 31,704 artillery projectiles (M509A1, M483) containing over 3 million DPICM submunitions to Jordan in 1995 as these were being phased out of the US inventory.¹⁶⁰ According to US export records, Jordan also imported 200 CBU-71 and 150 Rockeye cluster bombs at some point between 1970 and 1995.¹⁶¹

Kazakhstan

The Republic of Kazakhstan is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group

¹⁵⁷ Statement by the Delegation of Japan, “Japan’s application of IHL to using explosive ordnance which may become ERW,” to the Thirteenth Session of the CCW GGE, Geneva, March 8, 2005.

¹⁵⁸ Delegation of Japan to the Conference on Disarmament, “Reply to the Questionnaire by Pax Christi Netherlands Subject: Military Utility of Cluster Weapons, Country: Japan,” May 31, 2005.

¹⁵⁹ Ibid.

¹⁶⁰ US Defense Security Cooperation Agency, Department of Defense, “Excess Defense Article database,” undated, <http://www.dsca.osd.mil/programs/eda/search.asp> (accessed November 28, 2006).

¹⁶¹ US Defense Security Assistance Agency, “Cluster Bomb Exports under FMS, FY1970-FY1995.”

reports that RBK-500 cluster bombs are in service with the country's air force.¹⁶² It also possesses *Uragan* 220mm surface-to-surface rockets but it is not known if these include versions with submunition payloads.

North Korea

The Democratic People's Republic of Korea is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists North Korea as producing and stockpiling submunition warheads for 122mm, 170mm, and 240mm rockets. Jane's Information Group also credits the air forces of North Korea as possessing KMG-U dispensers, RBK-500, and unspecified types of anti-armor and anti-runway cluster bombs.¹⁶³

South Korea

The Republic of Korea is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. The Ministry of Defense acknowledges that it "maintains stockpiles of old types of cluster weapons with a high failure rate. There are currently no plans to upgrade these holdings." It adds, "Equipping old types of submunitions with [self-destruct] mechanisms is not considered feasible due to technical and financial problems."¹⁶⁴ South Korea is known to possess M26 rockets and ATACMS missiles for its MLRS launchers. Between 1993 and 1999, the US provided 393 M26A1 Extended Range rockets, 271 M26 rockets, 111 ATACMS-1 missiles, and 111 ATACMS missiles.¹⁶⁵ The United States concluded a licensing agreement with South Korea in 2001 for production of DPICM submunitions for MLRS rockets.¹⁶⁶ South Korea also stockpiles DPICM artillery

¹⁶² *Jane's Air Launched Weapons*, p. 841.

¹⁶³ The primary source for information on North Korea's cluster munitions are *Jane's Air Launched Weapons*, p. 841 and *Jane's Ammunition Handbook*.

¹⁶⁴ Communication from South Korea Ministry of National Defense through the Permanent Mission of South Korea in Geneva, to Pax Christi Netherlands, June 3, 2005.

¹⁶⁵ Data from US Defense Security Cooperation Agency, Department of Defense, "Notifications to Congress of Pending U.S. Arms Transfers," "Foreign Military Sales," "Direct Commercial Sales," and "Excess Defense Articles" databases, <http://www.dsca.osd.mil/> (accessed November 28, 2006).

¹⁶⁶ US Army Aviation & Missile Command Contract Announcement: DAAH01-00-C-0044, "US Department of Defense news release, November 9, 2001, http://www.defenselink.mil/contracts/2001/c11092001_ct575-01.html (accessed November 28, 2006).

projectiles (105mm, 155mm, 203mm) imported from the US. Jane's Information Group lists it as also possessing CBU-87 and Rockeye cluster bombs.¹⁶⁷

"South Korea stopped production of old types of cluster munitions," according to the Ministry of Defense, and "cluster munitions currently in production have a high level of reliability and most are equipped with [self-destruct] mechanisms."¹⁶⁸ Two companies in South Korea, Poongsan and Hanwha, produce cluster munitions. Poongsan entered into a licensed production agreement with Pakistan Ordnance Factories in November 2004 to co-produce K-310 155mm extended-range (base bleed) DPICM projectiles in Pakistan at Wah Cantonment. While the ammunition is primarily being produced for Pakistan's army, the two firms will also co-market the projectiles to export customers.¹⁶⁹

Kuwait

Kuwait is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. In 1995, Kuwait was the first export customer for the Russian produced 300mm *Smerch* multiple launch rocket system fitted with dual-purpose and sensor-fuzed submunitions, buying 27 launch units.¹⁷⁰

Libya

The Great Socialist People's Libyan Arab Jamahiriya is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists Libya as possessing KMG-U dispensers and RBK-500 aerial cluster bombs.¹⁷¹

¹⁶⁷ *Jane's Air Launched Weapons*, p. 841.

¹⁶⁸ Communication from South Korea Ministry of National Defense, to Pax Christi Netherlands.

¹⁶⁹ "Pakistan Ordnance Factory, S. Korean Firms Sign Ammunition Pact," *Asia Pulse* (Karachi), November 24, 2006.

¹⁷⁰ "Kuwait to get smart submunitions for Smerch MRL," *Jane's Defence Weekly*, April 21, 1995.

¹⁷¹ *Jane's Air Launched Weapons*, p. 842.

Moldova

The Republic of Moldova is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition policy. In 2003, Moldova reported that it possessed 11 220mm *Uragan* multiple launch rocket systems.¹⁷² It reported the transfer of 860 missiles for this launch system with a submunition warhead (each containing 30 high-explosive grenades) to Guinea in 2000.¹⁷³ It also exported 13 *Uragan* launch systems to Yemen in 1994.¹⁷⁴

Mongolia

Mongolia is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group reports that KMG-U dispensers are in service with the country's air force.¹⁷⁵

Morocco

The Kingdom of Morocco is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Between 1970 and 1995, the US transferred to Morocco 2,994 CBU-52, 1,752 CBU-58, 748 CBU-71, and 850 Rockeye cluster bombs.¹⁷⁶ The British NGO Landmine Action reports that there is significant contamination by air-dropped (BLU-63 delivered by CBU-71A/B) and ground-delivered cluster munitions (M42 and M46 DPICM delivered by 155mm M483A1) in the disputed territory of the Western Sahara.¹⁷⁷

Netherlands

The Kingdom of the Netherlands is party to CCW and ratified Protocol V on July 18, 2005. The Royal Netherlands Air Force dropped CBU-87 cluster bombs during the

¹⁷² Submission by the Republic of Moldova, UN Register of Conventional Arms, Report for Calendar Year 2002, July 1, 2003.

¹⁷³ Submission by the Republic of Moldova, UN Register of Conventional Arms, Report for Calendar Year 2000, May 30, 2001.

¹⁷⁴ Submission by the Republic of Moldova, UN Register of Conventional Arms, Report for Calendar Year 1994, April 28, 1995.

¹⁷⁵ *Jane's Air Launched Weapons*, p. 842.

¹⁷⁶ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

¹⁷⁷ Landmine Action, "Explosive Ordnance Disposal and technical survey in Polisario-controlled areas of Western Sahara," project proposal, February 2006, p. 4. Email communication from Simon Conway, director, Landmine Action to Human Rights Watch, May 3, 2006.

1999 NATO intervention in Yugoslavia, including Kosovo. Eurometaal NV formerly produced cluster munitions in the Netherlands.¹⁷⁸

During the CCW Review Conference in November 2006, the Netherlands did not support either the proposed mandate or the declaration in favor of a new international instrument on cluster munitions.

In regard to the applicability of existing IHL to cluster munition use, the Netherlands has stated, “The criterion of discrimination is to be applied by the operator of the weapon system delivering the ammunition in question, for the evaluation of which the operator must take into account the effects of the ammunition in relation to the target or target area. Provided they are used for appropriate targets, cluster munitions can be used in a discriminate manner on this basis.”¹⁷⁹ In terms of military utility, “Cluster ammunition is used to attack a group of smaller targets in a defined area. Examples include military airfields, military compounds, convoys of military vehicles, etc. By using cluster ammunition, multiple targets can be engaged in a single attack without the need for multiple attacks.”¹⁸⁰

With regard to stockpiles of cluster munitions held by the Netherlands, “The Royal Netherlands Air Force is considering withdrawal of the BL-755 from its inventory in the near future. Furthermore, the Royal Netherlands Air Force is considering two modifications to the existing CBU-87. The first modification is to add precision guidance capability to the cluster ammunition itself (the main unit). The second modification is to equip the sub-munitions with a self-destruct feature.” In October 2005, State Secretary for Defense Procurement Cees van der Knaap stated that the BL-755 cluster bombs would be destroyed, with the disposal process scheduled to be completed by the end of 2006.¹⁸¹

¹⁷⁸ Eurometaal was licensed by a US manufacturer to produce M483A1 and M864 155mm DPICM artillery projectiles in its facility in Zaandam. It also shared production from the Zaandam plant with the licensed production undertaken by the Turkish company MKEK at its production facility in Kirikale. Production has ceased in the Netherlands. *Jane's Ammunition Handbook*, pp. 336-338.

¹⁷⁹ Communication from the Netherlands Ministry of Foreign Affairs, to Pax Christi Netherlands, May 17, 2005.

¹⁸⁰ *Ibid.*

¹⁸¹ Joris Janssen, “Dutch Plan to Update Cluster Weapons,” *Jane's Defence Weekly*, October 19, 2005.

In May 2005, the government said, "Due to replacement of artillery systems most M483 DPICM grenades are to be taken out of inventory. The remaining grenades are to be used by PzH2000 systems currently being introduced."¹⁸² In 2004, the Royal Netherlands Army had a stockpile of 174,000 M483A1 155mm DPICM artillery projectiles. Of these, 120,000 projectiles were to be destroyed and 54,000 retained until the delivery platform was taken out of service.¹⁸³

In January 2006, the Ministry of Defence announced the transfer of 18 MLRS launchers to Finland.¹⁸⁴ It was previously reported that 400 M26 rockets (each containing 644 M77 DPICM grenades) will be included in the sale for qualification testing and conversion into training rockets. The remaining stockpile of 16,000 M26 rockets in the Dutch inventory will apparently not be transferred and will be destroyed.¹⁸⁵

Nigeria

The Federal Republic of Nigeria is a signatory of CCW. It has not made a public declaration of its cluster munition stockpiles or policy. Nigerian ECOMOG peacekeepers used BLG-66 Belouga bombs in an attack on the eastern town of Kenema in Sierra Leone in 1997. Jane's Information Group reports that BL-755 cluster bombs are in service with the country's air force.¹⁸⁶

Norway

The Kingdom of the Norway is party to CCW and ratified Protocol V on December 8, 2005. Norway announced on November 16, 2006 its intention to facilitate a process aimed at the negotiation of a new international treaty prohibiting cluster munitions that cause unacceptable harm to civilians. It will host the first meeting of such a

¹⁸² Communication from the Netherlands Ministry of Foreign Affairs, to Pax Christi Netherlands.

¹⁸³ Janssen, "Dutch Plan to Update Cluster Weapons."

¹⁸⁴ "Finland Receives Two MLRS Batteries," Dutch Ministry of Defense press release, January 13, 2006, translated by Defense-aerospace.com.

¹⁸⁵ Janssen, "Dutch Plan to Update Cluster Weapons."

¹⁸⁶ *Jane's Air Launched Weapons*, p. 843.

process from February 22-23, 2007. Additionally, Norway is observing a moratorium on the use of cluster munitions pending a new international agreement.

In March 2006 Norway stated, “We strongly believe in an instrument on cluster munitions, and are willing to pursue the issue on a wide front.”¹⁸⁷ It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.¹⁸⁸ Norway has also urged CCW states parties to “consider a more general prohibition on the use of cluster munitions against military targets located in civilian areas.”¹⁸⁹

Norway argues that cluster munition use raises problems under the Geneva Convention’s Additional Protocol I Article 51(5)(2) prohibition on indiscriminate bombardments, and, given the wide dispersal pattern, under the Article 51(4) limitations on attacking military targets near civilian areas. It also argues that “the use of cluster munitions, due to their high number of submunitions, their wide dispersal, and, in many cases, their high dud rate” may pose problems under the proportionality principle.¹⁹⁰ It also suggested that high-altitude aerial bombardment using cluster munitions violates the principle of distinction.¹⁹¹

The Norwegian Armed Forces have a stockpile of 53,000 155mm DPICM artillery projectiles in service, the DM-642 (each with 63 DM-1383 grenades) and the DM-662 (each with 49 DM-1385 grenades). In February 2005, the Ministry of Defence stated, “Cluster munitions are not produced in Norway.... All submunitions in Norwegian

¹⁸⁷ Statement by the Delegation of Norway to the Thirteenth Session of the CCW GGW, Geneva, March 6-10, 2006, p. 2.

¹⁸⁸ “Declaration on Cluster Munitions,” November 17, 2006.

¹⁸⁹ Response from Norway, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.5, July 29, 2005, p. 4.

¹⁹⁰ *Ibid.*

¹⁹¹ *Ibid.*, p. 7.

stock are equipped with self-destruct mechanisms.”¹⁹² Norway has destroyed its stockpile of Rockeye cluster bombs.¹⁹³

In tests carried out in Norway in September and October 2005 of the Norwegian stockpile of cluster munitions, as well as identical UK-owned DPICM projectiles, submunition failure rates of 2.3 percent, 2 percent and 1.3 percent were achieved. Consequently, the Minister of Defence in May 2006 ordered a full review of the Norwegian stockpile of cluster munitions and new tests were carried out in September 2006.

Oman

The Sultanate of Oman is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists it as possessing BL-755 and Rockeye cluster bombs.¹⁹⁴

Pakistan

The Islamic Republic of Pakistan is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Pakistan Ordnance Factories produces and offers for export M483A1 155mm artillery projectiles containing 88 M42/M46 DPICM grenades.¹⁹⁵ The South Korean company Poongsan entered into a licensed production agreement with Pakistan Ordnance Factories in November 2004 to co-produce K-310 155mm extended-range base bleed DPICM projectiles in Pakistan at Wah Cantonment. While the ammunition is being produced for Pakistan's army, the two firms will also co-market the projectiles to export customers.¹⁹⁶

¹⁹² Communication from the Norwegian Ministry of Defence, to Pax Christi Netherlands, February 6, 2005. It also stated that “in accordance with established Norwegian policy, only ground-launched (cargo-) munitions with a reliability of at least 99% may be procured. This policy also states that no such ammunition may be procured unless equipped with a self-destruct mechanism.”

¹⁹³ *Ibid.*

¹⁹⁴ *Jane's Air Launched Weapons*, p. 843.

¹⁹⁵ Pakistan Ordnance Factories, “Products, Ordnance, Artillery Ammunition, 155mm HOW HE M483 A1-ICM,” undated, <http://www.pof.gov.pk/mexports.htm#> (accessed June 7, 2006).

¹⁹⁶ “Pakistan Ordnance Factory, S. Korean Firms Sign Ammunition Pact,” *Asia Pulse* (Karachi), November 24, 2006

Jane's Information Group credits the Pakistan Air Weapons Center with the production of the Programmable Submunitions Dispenser (PSD-1), which is reported to be similar to the Rockeye cluster bomb, and dispenses 225 anti-armor bomblets.¹⁹⁷ It states that the Pakistan National Development Complex produces and markets the Hijara Top-Attack Submunitions Dispenser (TSD-1) cluster bomb.¹⁹⁸ It also lists Pakistan's air forces as possessing BL-755 cluster bombs.¹⁹⁹ The US also transferred to Pakistan 200 Rockeye cluster bombs at some point between 1970 and 1995.²⁰⁰

Poland

The Republic of Poland is party to CCW but has yet to ratify Protocol V. According to the Ministry of Defense, "From a military perspective cluster weapons offer unmatched cost-effectiveness in their ability to dispense carried submunitions/bomblets over a broad area and attack multiple targets."²⁰¹ However, this view is tempered with this realization: "The fact that submunitions are able to destroy targets with equal effectiveness on the whole attack area, might lead to careless target selection by their users, by consequence increasing risk of collateral damage."²⁰²

Additionally, "Unexploded bomblets could delay military operations and result in military casualties for the troops that deployed these weapons. Thus it is both in the military and humanitarian interests that the use of the less reliable submunitions be avoided and the failure rate of submunitions be reduced."²⁰³ In regards to future

¹⁹⁷ *Jane's Air Launched Weapons*, p. 389.

¹⁹⁸ *Ibid.*

¹⁹⁹ *Ibid.*, p. 843.

²⁰⁰ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

²⁰¹ Communication from the Polish Ministry of National Defense, to Pax Christi Netherlands, February 14, 2005. The information was provided to Pax Christi with the proviso that the "content of the paper does not necessarily reflect the official position of Poland."

²⁰² *Ibid.*

²⁰³ *Ibid.*

procurements of cluster munitions, “The Ministry of Defense requires during acceptance tests less than 2.5% failure rate for the purchased submunitions.”²⁰⁴

With respect to the applicability of existing IHL to cluster munition use, Poland states that military commanders should take “precautionary measures” to minimize civilian casualties from submunitions, “bear[ing] in mind...the manufacturer’s user guidelines, such as topographic conditions affecting the correct performance of the submunitions (it could be failure-prone in marshland and woodlands).”²⁰⁵

Poland acknowledges possessing both air-dropped and surface-launched cluster munitions. Polish land forces are equipped with 122mm artillery rockets for BM-21 and RM-70/85 multiple launch rocket launchers. Each rocket contains 42 GKO DPICM submunitions. Land forces also possess 98mm mortar bombs each contain 12 GKO DPICM submunitions. The GKO DPICM submunition is equipped with a backup self-destruct fuze.²⁰⁶ The Polish company Tlocznia Metali Pressta Spolka Akcyjna manufactures 122mm rockets.²⁰⁷

With regard to air-dropped cluster munitions, the Ministry of Defense states, “The Polish Air Force possesses a small residual stock of old cluster bombs which entered into service in the 1980s during the treaty of Warsaw era. Moreover it should be stressed that the current military Air Forces doctrine does not anticipate any use of air-delivered cluster munitions both in present and future military operations. Therefore it is almost certain that those weapons will be left untouched in their storage sites until their life span expires.”²⁰⁸

²⁰⁴ Ibid.

²⁰⁵ Response from Poland, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.3, July 4, 2005, p. 2.

²⁰⁶ Communication from the Polish Ministry of National Defense, to Pax Christi Netherlands.

²⁰⁷ *Jane’s Ammunition Handbook*, p. 626.

²⁰⁸ Communication from the Polish Ministry of National Defense, to Pax Christi Netherlands.

The Polish company Dezamet produced the ZK-300 Kisajno cluster bomb containing 315 LBOK-1 fragmentation bomblets.²⁰⁹ Jane's Information Group also lists Poland as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 cluster bombs.²¹⁰

Portugal

The Portuguese Republic is party to CCW but has yet to ratify Protocol V. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.²¹¹

Portugal has not made a public declaration of its cluster munition stockpiles or policy. The only indication that Portugal stockpiles cluster munitions was mention in its annual national report for CCW Amended Protocol II in 2005 of the destruction of 11 BL-755 cluster bombs.²¹²

Romania

Romania is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. The company SN Romarm SA produces two types of 152mm DPICM artillery projectiles called the CG-540 and CG-540 ER, which contain GAA-001 bomblets. This is reported to be a joint production and marketing venture with Israel Military Industries. The GAA-001 bomblet is described as identical to the Israeli M85 and is produced by the Romanian company

²⁰⁹ *Jane's Air Launched Weapons*, p. 391.

²¹⁰ *Ibid.*, p. 844.

²¹¹ “Declaration on Cluster Munitions,” November 17, 2006.

²¹² Portugal National Annual Report Submitted in Accordance with Article 13 of CCW Amended Protocol II, September 26, 2005, CCW/AP.II/CONF.7/NAR.10, p. 6.

Aeroteh SA.²¹³ The company ROMAIR is reported to have developed and produced the CL-250 cluster bomb, which is described as similar in appearance to the RBK-250. It is reported to carry BAAT-10 antitank bomblets and BF-10T antipersonnel bomblets.²¹⁴ Jane's Information Group also lists Romania as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 cluster bombs.²¹⁵

Russia

The Russian Federation is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. In August 2005, Russia said, "As for the cluster munitions use, the Russian armed force are guided in their activities by the principles of legality, distinction, proportionality, precautions, environmental protection and military necessity."²¹⁶ Russia has argued that submunitions can be accurately targeted to minimize civilian damage, implying that it could isolate military targets in populated areas.²¹⁷ It has used cluster munitions in Chechnya.²¹⁸

Russia, and historically the USSR, is a major producer and exporter of cluster munitions. It likely stockpiles significant numbers of cluster munitions. Cluster munitions of Russian/Soviet origin are reported to be in the stockpiles of the following countries: Algeria, Angola, Bulgaria, Croatia, Cuba, Egypt, Hungary, India, Iran, Iraq, Kazakhstan, North Korea, Kuwait, Libya, Moldova, Mongolia, Poland, Romania, Slovakia, Sudan, Syria, and Yemen. The following companies are associated with the production of cluster munitions: Bazalt State Research and Production Enterprise (air-dropped bombs), Mechanical Engineering Research Institute (120mm, 152mm, 203mm artillery projectiles), and Splyav State Research

²¹³ *Jane's Ammunition Handbook*, p. 322.

²¹⁴ *Jane's Air Launched Weapons*, p. 290.

²¹⁵ *Ibid.*, p. 844.

²¹⁶ Statement by the Russian Delegation, "Applicability of Rules of the International Humanitarian Law to the Explosive Remnants of War," to the Eleventh Session of the CCW GGE, Geneva, August 2, 2005.

²¹⁷ Russian Federation Presentation, "Cluster Weapons: Real or Mythical Threat," to the Eleventh Session of the CCW GGE, Geneva, August 2-12, 2005, p. 3.

²¹⁸ The USSR also used cluster munitions in Afghanistan.

and Production Enterprise Rocket (122mm, 220mm, 300mm rockets and missiles). The types of cluster munitions produced by Russia are listed in the following table:²¹⁹

Type	Caliber	Carrier Name	Number	Submunition Type
Projectiles	120mm		35	DPICM
	152mm	3O23	42	DPICM
	152mm	3O13	8	DPICM
	203mm	3O14	24	DPICM
Bombs		KMGU	Mix of:	
			96	AO 2.5 APAM
			8	ODS-OD FAE
			98	PTAB 2.5
			248	PTAB-1M
		PROSAB-250	90	PROSAB bomblet
		RBK-250	48	ZAB 2.5 Incendiary
		RBK 250-275	60	AO-2.5 APAM
		RBK 250-275		AO-2.5-2 APAM
		RBK 250-275	30	PTAB 2.5M
		RBK-500	108	AO-2.5 APAM
		RBK-500	108	AO-2.5-2 APAM
		RBK 250-275	150	AO-15Ch bomblet
		RBK-500	75	PTAB 2.5
		RBK-500	268	PTAB 2.5M
		RBK-500	565	ShOAB-0.5 bomblet
		RBK-500	12	BetAB bomblets
		RBK-500	117	ZAB 2.5 Incendiary
		RBK-500	15	SPBE-D SFW
		RBK-500U	10	OFAB-50 APAM
			26	OFAB 2.5 APAM
			15	SPBE-D
			352	PTAB
Rockets	122mm	Grad	45	APAM
	220mm	Uragan	30	APAM
	300mm	Smerch	72	APAM

Table 3: Russia's Cluster Munitions

²¹⁹ The primary sources for information on Russia's cluster munitions are *Jane's Air-Launched Weapons* and *Jane's Ammunition Handbook*. It is supplemented with information from US Defense Intelligence Agency, "Improved Conventional Munitions and Selected Controlled-Fragmentation Munitions (Current and Projected) DST-1160S-020-90."

Saudi Arabia

The Kingdom of Saudi Arabia is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. The US transferred 600 CBU-87 Combined Effects Munitions cluster bombs to it as part of a larger arms sales package announced in 1992.²²⁰ In 1991, the US announced its intent to transfer 1,200 CBU-87 cluster bombs.²²¹ The US also transferred to Saudi Arabia 1,000 CBU-58 and 350 CBU-71 cluster bombs at some point between 1970 and 1995.²²² Jane's Information Group reports that BL-755 bombs are also in service with the country's air force.²²³

Saudi Arabia is also a customer for the ASTROS multiple launch rocket system produced by Brazil.²²⁴ These weapons were used by Saudi forces against Iraqi forces during the battle of Khafji in January 1991, leaving behind significant amounts of unexploded submunitions.²²⁵

Serbia

Serbia is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. It was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions "within concentrations of civilians," prohibit the use of cluster munitions that "pose serious humanitarian hazards because they are for example

²²⁰ US Defense Security Cooperation Agency, Department of Defense, "Notifications to Congress of Pending US Arms Transfers, #92-42," September 14, 1992, http://www.fas.org/asmp/profiles/notif_db.php?regionin=%25&ctryin=sau&descin=&datein=1992&date2in=2002&typein=%25 (accessed November 29, 2006).

²²¹ US Defense Security Assistance Agency, Department of Defense, "Notifications to Congress of Pending US Arms Transfers," July 25, 1991.

²²² US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

²²³ *Jane's Air Launched Weapons*, p. 845.

²²⁴ *Jane's Ammunition Handbook*, p. 630.

²²⁵ Human Rights Watch interviews with former explosive ordnance disposal personnel from a Western commercial clearance firm and a Saudi military officer with first-hand experience in clearing the dud dual-purpose bomblets from ASTROS rockets and Rockeye cluster bombs, names withheld, Geneva, 2001-2003.

unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.²²⁶

Forces of Yugoslavia and NSAG used available stocks of cluster munitions during the 1998-1999 conflict in Kosovo. There were several cross-border rocket attacks by Yugoslav forces into Albania. Additionally, aircraft from the Netherlands, UK, and US dropped cluster bombs in Serbia and Kosovo during the 1999 NATO air campaign.

Serbia likely inherited the production and marketing capabilities of the Socialist Federal Republic of Yugoslavia. The company Yugoimport SDPR is associated with the production of 122mm and 155mm DPICM artillery projectiles and M87 Orjan surface-to-surface rockets. The type of submunitions carried in these cluster munitions are the KB-1 and KB-2 DPICM. Yugoslavia was the first non-Western country to produce and export DPICM.²²⁷

According to the Jane’s Information Group, “At the 1991 Paris Air Show it became known that the Yugoslav Air Force was in possession of several bomblets of various types and at least one cluster bomb and cluster bomb unit. Some bombs were thought to have been bought direct from the USSR, and it is believed that others were manufactured under license or even designed by the Federal Directorate of Supply and Procurement (SDPR) in Belgrade, now Serbia.”²²⁸ The designations of the cluster bombs are RAB-120 and KPT-150. Jane’s Information Group lists it as possessing BL-755 cluster bombs.²²⁹

Singapore

The Republic of Singapore is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. The company Singapore Technologies Kinetics Ltd (ST Kinetics) produces two types of 155mm DPICM artillery projectiles (containing 63 or 49 grenades) equipped with electro-mechanical self-destruct fuzes

²²⁶ “Declaration on Cluster Munitions,” November 17, 2006.

²²⁷ US Defense Intelligence Agency, “Improved Conventional Munitions and Selected Controlled-Fragmentation Munitions (Current and Projected) DST-11605-020-90.”

²²⁸ *Jane’s Air Launched Weapons*, p. 291.

²²⁹ *Ibid.*, p. 845.

with an advertised dud rate of 3 percent.²³⁰ The company also produces a 120mm mortar bomb which delivers 25 DPICM grenades.²³¹ The US also transferred to Singapore 350 CBU-71 cluster bombs at some point between 1970 and 1995.²³²

Slovakia

The Slovak Republic is party to CCW and ratified Protocol V on March 23, 2006. It has not made a public declaration of its cluster munition stockpiles or policy, but it was one of the CCW states parties that support a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.²³³ The company Konstruktia Defense produces 152mm artillery projectiles and 122mm surface-to-surface rockets with DPICM submunition payloads.²³⁴

South Africa

The Republic of South Africa is party to CCW but has yet to ratify Protocol V. During the CCW Review Conference in November 2006, South Africa did not support either the proposed mandate or the declaration in favor of a new international instrument on cluster munitions.

In regard to the applicability of existing IHL to cluster munition use, “the South African Armed Forces perceive cluster weapons as valid weapons of war when

²³⁰ Singapore Technologies Engineering, “Product: 155m Cargo Round,” undated, <http://www.stengg.com/CoyCapPro/detail.aspx?pdid=151> (accessed June 7, 2006).

²³¹ *Ibid.*

²³² US Defense Security Assistance Agency, “Cluster Bomb Exports under FMS, FY1970-FY1995.”

²³³ “Declaration on Cluster Munitions,” November 17, 2006.

²³⁴ *Jane's Ammunition Handbook*, pp. 321, 627.

applied correctly in terms of the law of war.”²³⁵ According to the Foreign Ministry, “the South African Defence Force has manufactured and used submunitions in the past, which have been phased out, and is in the process of developing newer generations of submunitions.”²³⁶ South Africa has established a reliability requirement for cluster munitions; they “must function as intended at a reliability rate better than 98% and at a confidence level of better than 95%.”²³⁷

South Africa stockpiles the M2001 155mm DPICM artillery projectile, produced by Denel, which contains 42 submunitions with self-destruct devices.²³⁸ Furthermore, “In the 155mm product line, a back-up self-destruct pyrotechnical feature is incorporated into the fuze which separates the detonation train from the main charge.”²³⁹ Additionally, “Details of reliability and functioning of the current generations of submunitions in the South African arsenal are classified, suffice to say that reliability for submunitions to function as intended is currently better than 98% and at a confidence level of better than 95%.”²⁴⁰

South Africa also possesses one type of cluster bomb, called TIEKIE, which has been degraded for training use only.²⁴¹ Denel also produced the CB-470 cluster bomb containing 40 Alpha bomblets, although it is thought that this was produced for export purposes only. Iraq is reported to have bought the CB-470 in the late 1980s.²⁴²

Spain

The Kingdom of Spain is party to CCW and ratified Protocol V on February 9, 2007. Spain has stated, “All types of cluster munitions have a high operational value as a

²³⁵ Communication from the South African Delegation to the Conference on Disarmament, to the Pax Christi Netherlands, January 19, 2005.

²³⁶ Ibid.

²³⁷ Ibid.

²³⁸ Denel, “Land Systems, Artillery Systems, 155 mm Towed/SP Gun-Howitzer,” undated, http://www.denel.co.za/Landsystems/Artillery_Systems.asp (accessed June 8, 2006).

²³⁹ Communication from the South African Delegation, to the Pax Christi Netherlands.

²⁴⁰ Ibid.

²⁴¹ Ibid.

²⁴² *Jane's Air Launched Weapons*, p. 440.

means to deny enemy forces the use of key targets temporally.”²⁴³ However, Spain was one of the CCW states parties that supported a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. On October 29, 2002, the Spanish Parliamentary Defense Commission unanimously approved a motion according to which the Spanish government, in the framework of the CCW, should maintain a favorable position toward banning the use of cluster bombs against non-military targets. The inclusion of technical improvements on these bombs, such as those related to self-destruction, detectability and neutralization should also be pursued.²⁴⁴

Spain currently stockpiles three types of cluster munitions: CBU-100/B (Rockeye) cluster bomb (imported from US), BME-330 anti-runway cluster bomb (produced nationally), and mortar bomb MAT-120 (produced nationally).²⁴⁵ The companies Esperanza y Cia, Expal Explosivos SA, Instalaza SA, International Technology SA, and Santa Barbara SA are associated with the production of cluster munitions.

Sudan

The Republic of the Sudan is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Sudanese government forces sporadically used air-dropped cluster munitions in southern Sudan between 1996 and 1999. Jane's Information Group reports that KMG-U dispensers are in service with the country's air force.²⁴⁶

Sweden

The Kingdom of Sweden is party to CCW and was the first country to ratify Protocol V on June 2, 2004. The Minister of Foreign Affairs said to the Swedish parliament on March 7, 2006, that “Sweden will pursue the issue of adopting a negotiating mandate to regulate cluster weapons at the upcoming Third Review Conference [of

²⁴³ Communication from Spain, to Pax Christi Netherlands, March 22, 2005.

²⁴⁴ Ibid.

²⁴⁵ Ibid.

²⁴⁶ *Jane's Air Launched Weapons*, p. 846.

CCW] in the fall of 2006.”²⁴⁷ It introduced the proposal for a negotiating mandate in September 2006. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.²⁴⁸

In regard to the applicability of existing IHL to cluster munition use, Sweden states that the use of a cluster bomb with submunitions with a high dud rate “in populated areas is likely to create a disproportionate suffering for the civilian population compared to the military advantage from the use of such a weapon. Furthermore, it could be argued that a cluster bomb with a large ‘foot print’ can be considered to be indiscriminate if used in a populated area.”²⁴⁹

The Swedish Air Force stockpiles one type of cluster munition, the BK-90 *Mjölner*, which dispenses MJ-1 fragmentation bomblet and the MJ-2 anti-armor proximity fuzed bomblet.²⁵⁰ The failure rate of the bomblets is reported to be less than 1 percent and if the submunition becomes a dud on the ground, it is designed to self-deactivate after two hours preventing it from being dangerous.²⁵¹ The German company LFK is the prime contractor for the BK-90 with participation of SAAB Bofors Dynamics.²⁵²

The BONUS sensor-fuzed weapon carried in a 155mm artillery projectile is co-produced in Sweden by Saab Bofors Dynamics and is in service with the Swedish Army.²⁵³

²⁴⁷ Statement by Sweden to the Thirteenth Session of the CCW GGE, Geneva, March 8, 2006.

²⁴⁸ “Declaration on Cluster Munitions,” November 17, 2006.

²⁴⁹ Response from Sweden, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.8, July 29, 2005, p. 2.

²⁵⁰ *Jane's Air Launched Weapons*, pp. 360-361.

²⁵¹ Communication from the Swedish Ministry of Foreign Affairs, “Brevsvar klusterammunition,” to Pax Christi Netherlands, January 14, 2005.

²⁵² *Jane's Air Launched Weapons*, p. 361.

²⁵³ *Jane's Ammunition Handbook*, pp. 384-385.

Switzerland

The Swiss Confederation is party to CCW and ratified Protocol V on May 12, 2006. It was one of the CCW states parties supporting a mandate for negotiations on a legally-binding international instrument to address the problems posed by cluster munitions. It was also among the states that issued a declaration on the final day of the CCW Third Review Conference in November 2006 calling for an agreement that would prohibit the use of cluster munitions “within concentrations of civilians,” prohibit the use of cluster munitions that “pose serious humanitarian hazards because they are for example unreliable and/or inaccurate,” and require destruction of stockpiles of such cluster munitions.²⁵⁴

Addressing the applicability of existing IHL to cluster munition use, Switzerland called use of cluster weapons in densely populated areas “highly problematic” with regard to the principle of distinction.²⁵⁵ Switzerland warned that the use of cluster munitions, especially those with a high dud rate, in populated areas may violate the principle of distinction.²⁵⁶ Switzerland also supports the discussion of preventive technical measures to increase the reliability of certain specific types of munitions, including submunitions, in the framework of the CCW.²⁵⁷

In terms of military utility, “The Swiss Armed Forces would use its submunition during defensive fire support operations on its own territory.”²⁵⁸ Switzerland stockpiles three types of 155mm artillery projectiles with M85 self-destructing DPICM grenades (KaG-88 containing 63 grenades, KaG-90 containing 49 grenades, and KaG-88/99 containing 84 grenades) and MP-98 120mm mortar bomb containing 32 M85

²⁵⁴ “Declaration on Cluster Munitions,” November 17, 2006.

²⁵⁵ Response from Switzerland, “Responses to Document CCW/GGE/X/WG.1/WP.2, entitled IHL and ERW, Dated 8 March 2005,” CCW/GGE/XI/WG.1/WP.13, August 3, 2005, p. 3.

²⁵⁶ *Ibid.*

²⁵⁷ Communication from the Swiss Federal Department of Foreign Affairs, Directorate of International Law, to Pax Christi Netherlands, June 7, 2005.

²⁵⁸ *Ibid.*

grenades.²⁵⁹ Switzerland also procured the SMArt-155 sensor fuzed weapon as part of its 2001 Armament Program.²⁶⁰

According to the Department of Foreign Affairs, "All types of submunition in the stocks of the Swiss Armed Forces are equipped with a [self-destruct] device. In case an individual bomblet fails to function as intended, an independent mechanism will self-destruct the primary detonator of the individual bomblet with a high probability.... Therefore, the submunition of the Swiss Armed Forces has an overall reliability of at least 98%. The great majority of the maximum 2% unexploded bomblets remaining on the ground do not pose a humanitarian risk since they are in a safe or neutralized status."²⁶¹

Switzerland has destroyed its stocks of BL-755 cluster bombs. "The Swiss Armed Forces no longer have any cluster bomb units (an aircraft store composed of a dispenser and submunition) on stock, due to humanitarian concerns and the decision not to use aircrafts capable for ground combat."²⁶²

Syria

The Syrian Arab Republic is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group lists it as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 aerial cluster bombs.²⁶³

²⁵⁹ Ibid.

²⁶⁰ Department of Defense, Civil Protection and Sport, "Armament Program 2003-1990," undated, www.gr.admin.ch/internet/armasuisse/en/home/laufende/rustungsprogramme/rustungsprogramme.html (accessed June 8, 2006). See also "SMArt 155 – Proven Reliability and Accuracy," Rheinmetall DeTec AG press release.

²⁶¹ Communication from the Swiss Federal Department of Foreign Affairs, to Pax Christi Netherlands.

²⁶² Ibid.

²⁶³ *Jane's Air Launched Weapons*, p. 846.

Thailand

The Kingdom of Thailand is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. The US supplied it with 500 Rockeye and 200 CBU-71 cluster bombs at some point between 1970 and 1995.²⁶⁴

Turkey

The Republic of Turkey is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. The company Makina ve Kimya Endustrisi Kurumu (MKEK) license produced M483A1 155mm DPICM artillery projectiles.²⁶⁵ Turkey possesses M26 rockets and ATACMS missiles for its MLRS launchers. The United States announced in October 2004 its intent to transfer to Turkey a small number of CBU-103 Combined Effects Munitions and AGM-154 Joint Stand-Off Weapons.²⁶⁶ The US supplied it with 3,304 Rockeye cluster bombs at some point between 1970 and 1995.²⁶⁷

Turkmenistan

Turkmenistan is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. Turkmenistan inherited a stockpile of cluster munitions from the Soviet Union. It possesses *Uragan* 220mm and *Smerch* 300mm surface-to-surface rockets but it is not known if these include versions with submunition payloads.

Ukraine

Ukraine is party to CCW and ratified Protocol V on May 17, 2005. It has not made a public declaration of its cluster munition stockpiles or policy. Ukraine inherited a stockpile of cluster munitions from the Soviet Union. Jane's Information Group lists it

²⁶⁴ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

²⁶⁵ *Jane's Ammunition Handbook*, pp. 336-338.

²⁶⁶ US Defense Security Cooperation Agency, Department of Defense, "Notifications to Congress of Pending US Arms Transfers, #05-12," October 7, 2004, http://www.fas.org/asmp/profiles/notif_db.php?regionin=%25&ctryin=%25&descin=f-16&dateiin=1992&datezin=2004&typein=%25 (accessed November 29, 2006).

²⁶⁷ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

as possessing KMG-U dispensers, RBK-250, RBK-275, and RBK-500 cluster bombs.²⁶⁸ Ukraine also possesses *Uragan* 220mm and *Smerch* 300mm surface-to-surface rockets, but it is not known if these include versions with submunition payloads.

United Arab Emirates

The United Arab Emirates is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. The US provided 1,800 CBU-87 cluster bombs as part of a larger foreign military sales deal in 1999.²⁶⁹ Jane's Information Group reports that BL-755 bombs are also in service with the country's air force.²⁷⁰

United Kingdom

The United Kingdom of Great Britain and Northern Ireland is party to CCW, but has yet to ratify Protocol V. The UK is a producer, importer, and exporter of cluster munitions. It used cluster munitions in the Falkland Islands in 1982, Iraq and Kuwait in 1991, Yugoslavia (including Kosovo) in 1999, and Iraq in 2003. In March 2005, the UK stated, "Currently cluster munitions represent an essential capacity against area targets, particularly groups of military vehicles. Stringent considerations of the risk of collateral damage are applied each time they are used. In the long term they are likely to be used more sparingly, as new precision weapons come into service, and one day may be removed from service altogether."²⁷¹

The UK led the effort at the recent Third CCW Review Conference in November 2006 to promote further discussions in 2007 on ERW with a focus on cluster munitions.²⁷² The UK also announced at the Review Conference that it plans to withdraw from

²⁶⁸ *Jane's Air Launched Weapons*, p. 847.

²⁶⁹ US Defense Security Cooperation Agency, Department of Defense, "Notifications to Congress of Pending US Arms Transfers," November 1999.

²⁷⁰ *Jane's Air Launched Weapons*, p. 847.

²⁷¹ Delegation of the United Kingdom, "Working Paper on the Military Utility of Cluster Munitions," future working paper CCW/GGE/X/WG.1/WP.1, March 2005, p. 3.

²⁷² "Proposal for a Mandate on Explosive Remnants of War," presented by the United Kingdom, CCW/CONF.III/WP.15, November 15, 2006.

service, by the middle of the next decade, “dumb” cluster munitions and called on other countries to do the same.²⁷³

Also in November 2006 the “Cluster Munitions Prohibition Bill” was introduced in the House of Lords. The bill would prohibit the use, development, production, acquisition, possession, and transfer of cluster munitions. The bill’s definition of cluster munition excludes containers with sensor fuzed submunitions “which autonomously detect and engage military targets and which self-destruct, self-deactivate or self neutralise.”²⁷⁴

In regard to the applicability of existing IHL to cluster munition use, “The UK does not believe that area weapons, such as CBUs, are inherently inaccurate since an area of land or a vehicle convoy may be a legitimate military objective and may be accurately engaged by such weapons.”²⁷⁵ Additionally, “Cluster munitions are designed to be used predominantly against an array of military targets in the open, such as military vehicles, both armoured and soft-skinned, troops and logistic sites, or where there is a need for suppression. Air-delivered and ground launched cluster munitions serve different purposes, are used in different circumstances and are not designed to be a substitute for each other. Cluster munitions are not indiscriminate, either by design or in the way they are used and, as the definition suggests, they are designed to be spread over a pre-determined footprint, thus making them effective against area targets.”²⁷⁶

The UK stockpile of cluster munitions includes two variants of the BL-755 cluster bomb, M26 MLRS rockets, L20A1 155mm DPICM artillery projectiles containing the M85 grenade, and the submunition variant of the air-to-ground CRV-7 rocket system.²⁷⁷ M483 DPICM 155mm artillery projectiles were “declared obsolete and

²⁷³ Statement by Ambassador John Duncan to the Third Review Conference of the CCW, Geneva, November 13, 2006.

²⁷⁴ “Cluster Munitions (Prohibition) Bill,” HL Bill 10, November 23, 2006, Paragraph 4 (A) (b).

²⁷⁵ Communication from the United Kingdom Ministry of Defence, to Pax Christi Netherlands, June 10, 2005.

²⁷⁶ Ibid.

²⁷⁷ Ibid.

taken out of service in April 2001. The stockpile is being disposed of under a programme which is due to be completed in the second half of 2007.²⁷⁸

In answers to Parliamentary questions, UK defense official revealed plans to dispose of its stockpile of "dumb" cluster munitions. In March 2007, the UK intends to award a contract to dispose of 50 percent of its stockpile of M26 MLRS Rockets over the next three years. It is envisioned that the entire M26 stockpile will be disposed of by 2013. On January 22, 2007 a contract was let to destroy "a significant quantity" of BL-755 and RBL-755 air-dropped bombs. All of these bombs are envisioned to be phased out by 2010.²⁷⁹

The US also supplied the UK with 1,008 CBU-87B cluster bombs at some point between 1970 and 1995, but they do not appear to be in service any longer.²⁸⁰

The UK purchased 59,364 L20A1 DPICM projectiles between 1996 and 2004. The L20A1 projectiles, 2,100 of which were used in the 2003 invasion of Iraq, were manufactured by BAE Systems Royal Ordnance under license from Israel Military Industries.²⁸¹ Some test results have been made available: "The manufacturers firing trials indicated that 97% of armed grenades will have a successfully functioning self-destruct mechanism.... The results of the acceptance proofs for lots 1 to 3 for which 60 shells (2,940 bomblets) were fired with 22 bomblet failures represent[s] a failure rate of 0.74%. Of these failures, only 6 of the bomblets had armed.... In Sep 05 the first in-service safety and performance test was carried out...at Hjerkin Range, Dombass, Norway. During the test 175 shells were fired of which none failed, 8,575 bomblets deployed of which 197 failed, giving a bomblet failure rate of 2.3%.²⁸²

Similarly, test results are also available for other cluster munitions in the UK inventory. The failure rate for M26 rockets, "derived from actual flight tests is

²⁷⁸ Defence Logistics Organisation (DLO) Secretariat, DLO Andover, "Response to Landmine Action question," Reference 06-02-2006-145827-009, March 27, 2006.

²⁷⁹ Answer Parliamentary Question on Cluster Munitions by Adam Ingram, *Hansard*, Column 504W, February 1, 2007.

²⁸⁰ US Defense Security Assistance Agency, "Cluster Bomb Exports under FMS, FY1970-FY1995."

²⁸¹ Answer Parliamentary Question on Cluster Munitions, *Hansard*, Column 498W, November 17, 2003.

²⁸² DLO Secretariat, "Response to Landmine Action question."

between 5% and 10% and is largely dependant on ground conditions and range.”²⁸³ With regard to the two variants of the BL-755 cluster bomb used by the UK, “On average, over [a] 15 year period, the most recent statistics indicate that the overall failure rate is 6.4%. Analysis of the failure modes indicates that 0.9% fail in an unarmed state and 5.5% fail unsafe and are a potential hazard.”²⁸⁴ UK representatives stated in March 2005, “The UK accepts that its air-dropped cluster bombs have a failure rate that is unacceptably high. This particular weapon will go out-of-service in coming years.”²⁸⁵ BL-755 cluster bombs produced in the UK have been exported to, or ended up being possessed by, Belgium, Eritrea, Germany, India, Iran, Italy, Netherlands, Nigeria, Oman, Pakistan, Saudi Arabia, Switzerland, Thailand, the United Arab Emirates, and Yugoslavia.²⁸⁶

United States

The United States of America is party to CCW but has yet to ratify Protocol V. It is a major producer and exporter of cluster munitions. The United States used cluster munitions in Southeast Asia (Cambodia, Laos, and Vietnam) in the 1960s and 1970s, Persian Gulf (Iraq, Kuwait, and Saudi Arabia) in 1991, Yugoslavia (including Kosovo) in 1999, Afghanistan in 2001 and 2002, and Iraq in 2003.

The US has said, “With respect to the suggestion by some that the use of cluster munitions is a humanitarian crisis and that their use may be indiscriminate in their effect, we join those who call for increasing reliability of cluster munitions through improved fusing and self-destruct mechanism.... Enhancing the reliability of munitions systems is an important goal from a military as well as a humanitarian point of view.”²⁸⁷ Additionally, “The call by some for a prohibition on the use of cluster munitions in or near populated areas is an overly simplistic approach that ignores the observations of recent conflicts. The imposition of such a prohibition

²⁸³ Ibid.

²⁸⁴ Ibid.

²⁸⁵ Delegation of the United Kingdom, “Working Paper on the Military Utility of Cluster Munitions,” p.3.

²⁸⁶ Belgium, Germany, Netherlands, Portugal, and Switzerland have reported subsequently disposing of or are in the process of disposing of some or all the weapons.

²⁸⁷ Statement by Col. W. Renn Gade, deputy legal counsel, Joint Chiefs of Staff, “Implementation of Existing International Humanitarian Law,” to the Eighth Session of the CCW GGE, July 7, 2004.

would provide further incentives to those who employ the unlawful tactic of positioning lawful military targets among civilians and civilian infrastructure in an attempt either deter or shield legitimate attacks or deliberately endanger noncombatants to gain political advantage. Inevitably, a targeting prohibition of this type would potentially increase harm to civilians, rather than further reduce humanitarian risk.”²⁸⁸

In 2001, then-Secretary of Defense William Cohen issued a policy memorandum stating that all submunitions reaching a Milestone 3 production decision in fiscal year 2005 and beyond would have a dud rate of less than 1 percent.²⁸⁹ In other words, submunitions that reach “full rate production,” that is production for use in combat, during the first quarter of fiscal year 2005 or thereafter must meet the new standard.²⁹⁰

Senators Dianne Feinstein and Patrick Leahy introduced on February 14, 2007 the “Cluster Munitions Civilian Protection Act of 2007.” If passed, this legislation will cut off US funds for the use, sale, or transfer of cluster munitions that have a dud rate greater than 1 percent. The bill also specifies that cluster munitions with a dud rate of less than 1 percent can only be used against clearly defined military targets and cannot be used near civilian populations.

An October 2004 report to Congress by the Department of Defense (DOD) provides details on a stockpile of 5.5 million cluster munitions containing about 728.5 million submunitions.²⁹¹ This figure however does not appear to be a full accounting of cluster munitions available to US forces. In particular, the tally does not include

²⁸⁸ Ibid.

²⁸⁹ Secretary of Defense William Cohen, “Memorandum for the Secretaries of the Military Departments, Subject: DOD Policy on Submunition Reliability (U),” January 10, 2001.

²⁹⁰ Ibid. See also presentation to the 45th Annual Fuze Conference by Anthony J. Melita, Deputy Director, Strategic and Tactical Systems, Munitions, US Department of Defense, “A Viewpoint from OSD,” April 2001, Slide 9, <http://www.dtic.mil/ndia/2001fuze/1Melita.pdf> (accessed November 29, 2006).

²⁹¹ Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), Department of Defense, “Report to Congress: Cluster Munitions,” October 2004. The report lists 626,824,422 submunitions in the “Active Inventory” and 728,477,489 in the “Total Inventory.” Active inventory denotes serviceable ammunition items that can be safely used in training or combat. Total inventory may include damaged, suspended, or unserviceable ammunition that is awaiting disposal or repair.

cluster munitions that are part of the War Reserve Stocks for Allies (WRSA).²⁹² Human Rights Watch has previously estimated that the US inventory, including WRSA, totaled about one billion submunitions.²⁹³

Cluster munitions are particularly ubiquitous in the stores of US ground forces. According to the DOD report, the Army has about 638.3 million cluster submunitions (88 percent of the total inventory) and the Marine Corps has about 53.3 million (7 percent). The report states, "Cannon and rocket artillery cluster munitions comprise over 80% of Army fire support capability," and they "comprise the bulk of the Marine Corps artillery munitions."²⁹⁴ The Air Force stockpiles about 22.2 million air-delivered cluster bombs (3 percent of the cluster inventory) and the Navy about 14.7 million (2 percent).

Of the 728 million submunitions, only 30,990 have self-destruct devices (.00004 percent).²⁹⁵ The DOD report cites failure rates of 2 to 6 percent for most of the submunitions, based on lot acceptance testing and stockpile reliability testing. Previous DOD documents have indicated much higher failure rates for the most common submunitions.²⁹⁶ Organizations involved in unexploded ordnance clearance in various countries also cite higher failure rates.

Both ground and air forces stockpile large numbers of outdated cluster munitions that have caused significant harm to civilians in recent conflicts. The Army and Marine Corps have 155mm artillery projectiles (M483/M483A1 and M864) containing about 402 million DPICM submunitions. The October 2004 DOD report cited a failure

²⁹² Under this program, munitions are stored in foreign countries (notably in Europe, Japan, and Korea), but kept under US title and control, then made available to United States and allied forces in the event of hostilities.

²⁹³ See Human Rights Watch, *Iraq: Cluster Munitions a Foreseeable Hazard in Iraq*, March 2003, <http://www.hrw.org/background/arms/clustero31803.htm>. The one billion submunitions figure is mostly drawn from US Army Materiel Systems Analysis Activity, "Unexploded Ordnance (UXO) Study," April 1996. The United States may have removed from inventory and destroyed a significant number of expired cluster munitions since that 1996 study. The new DOD report also does not include an unknown number of SADARM cluster munitions and TLAM cruise missiles with conventional submunitions, and more than 400,000 scatterable mine systems.

²⁹⁴ Office of the Under Secretary of Defense, "Report to Congress: Cluster Munitions," p. 2-3.

²⁹⁵ These are CBU-97 and CBU-105 Sensor Fuzed Weapons (SFW) held by the Air Force and Navy. The Army's SADARM cluster munitions, which are similar to SFW, are not included in the DOD report.

²⁹⁶ See Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), Department of Defense, "Unexploded Ordnance Report," undated, table 2-3, p. 5. Transmitted to the US Congress on February 29, 2000.

rate of 3 percent, while a July 2000 Army study cited 14 percent.²⁹⁷ Similarly, the Army has M26 Multiple Launch Rocket Systems (MRLS) containing about 282 million submunitions; the DOD report cited a failure rate of 5 percent, while an earlier study cited 16 to 23 percent.²⁹⁸

The Air Force has CBU-87 cluster bombs containing more than 20 million submunitions; the DOD report cited a failure rate of 4 to 6 percent, while UN clearance operations in Kosovo found a 7 percent failure rate.²⁹⁹ The Navy retains Rockeye cluster bombs with about 14.5 million submunitions; the DOD report cited a surprisingly low 2 percent failure rate.³⁰⁰

Even using the report's very conservative dud rates, however, the current submunition inventory, if employed, would leave behind more than 27 million hazardous duds. The report says that legacy munitions "will remain in the department's inventory until used or until they reach their extended life and are demilitarized."³⁰¹ Thus, while the DOD will destroy some submunitions because they have expired, it has no plans to destroy cluster munitions because of their high failure rates and inaccuracy. According to the report, a total of 480 million of the old, unreliable submunitions will still be in the inventory in fiscal year 2011.³⁰²

The US is known to have exported or transferred cluster munitions to at least 27 other states: Argentina, Australia, Bahrain, Belgium, Canada, Egypt, Denmark, France, Greece, Honduras, Indonesia, Israel, Italy, Japan, Jordan, South Korea, Morocco, Netherlands, Norway, Oman, Pakistan, Saudi Arabia, Spain, Thailand, Turkey, the United Arab Emirates, and the United Kingdom.³⁰³ The following US companies are

²⁹⁷ US Army Defense Ammunition Center, Technical Center for Explosives Safety, "Study of Ammunition Dud and Low Order Detonation Rates," July 2000, p. 9.

²⁹⁸ Office of the Under Secretary of Defense, "Unexploded Ordnance Report."

²⁹⁹ Office of the Under Secretary of Defense, "Report to Congress: Cluster Munitions," p. 4.

³⁰⁰ *Ibid.*, p. 6.

³⁰¹ Office of the Under Secretary of Defense, "Unexploded Ordnance Report," p. 12.

³⁰² *Ibid.*, pp. 12-16.

³⁰³ A number of these have reported subsequently disposing of or are in the process of disposing of some or all the weapons: Argentina, Australia, Canada, Denmark, France, Netherlands, Norway, and the United Kingdom. The methods of export or transfer include Foreign Military Sales, Direct Commercial Sales, and Excess Defense Article programs.

associated with the current production of cluster munitions and their submunitions: Aerojet, Alliant TechSystems, General Dynamics, L-3 Communications, Lockheed Martin, Northrop Grumman, Raytheon, and Textron Defense Systems.³⁰⁴

Uzbekistan

The Republic of Uzbekistan is party to CCW but has yet to ratify Protocol V. It has not made a public declaration of its cluster munition stockpiles or policy. It inherited a stockpile of cluster munitions from the Soviet Union. Jane's Information Group reports that KMG-U dispensers are in service with the country's air force.³⁰⁵ It also possesses *Uragan* 220mm surface-to-surface rockets, but it is not known if these include versions with submunition payloads.

Yemen

The Republic of Yemen is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Moldova exported 13 220mm *Uragan* multiple rocket launch systems to Yemen in 1994, but it is not known if these include versions with submunition payloads.³⁰⁶ Jane's Information Group reports that KMG-U dispensers are in service with the country's air force.³⁰⁷

Zimbabwe

The Republic of Zimbabwe is not party to CCW and has not made a public declaration of its cluster munition stockpiles or policy. Jane's Information Group reports that the Alpha bomblet developed for the South African CB-470 cluster bomb was produced by the predecessor of Zimbabwe, Rhodesia, and that "Zimbabwe may have quantities of the Alpha bomblet."³⁰⁸

³⁰⁴ American Ordnance, Day and Zimmermann, Ferranti International, Olin Ordnance, and Primex Technologies are past producers, but their current status is not known.

³⁰⁵ *Jane's Air Launched Weapons*, p. 848.

³⁰⁶ Submission by the Republic of Moldova, UN Register of Conventional Arms, Report for Calendar Year 1994, April 28, 1995.

³⁰⁷ *Jane's Air Launched Weapons*, p. 848.

³⁰⁸ *Ibid.*, p. 440.

Appendix I. Proposal for a Mandate to Negotiate a Legally-Binding Instrument that Addresses the Humanitarian Concerns Posed by Cluster Munitions³⁹⁹

**THIRD REVIEW CONFERENCE OF THE
STATES PARTIES TO THE
CONVENTION ON PROHIBITIONS OR
RESTRICTIONS ON THE USE OF
CERTAIN CONVENTIONAL WEAPONS
WHICH MAY BE DEEMED TO BE
EXCESSIVELY INJURIOUS OR TO
HAVE INDISCRIMINATE EFFECTS**

CCW/CONF.III/WP.1*
25 October 2006

Original: ENGLISH

Geneva, 7-17 November 2006

PROPOSAL FOR A MANDATE TO NEGOTIATE A LEGALLY-BINDING INSTRUMENT THAT ADDRESSES THE HUMANITARIAN CONCERNS POSED BY CLUSTER MUNITIONS

Presented by Austria, Holy See, Ireland, Mexico, New Zealand and Sweden

The Third Review Conference of the States Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which may Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects decides to establish an open-ended Group of Governmental Experts to negotiate a legally-binding instrument that addresses the humanitarian concerns posed by cluster munitions.

³⁹⁹ The proposal was also formally supported by Argentina, Bosnia and Herzegovina, Chile, Costa Rica, Czech Republic, Denmark, Germany, Guatemala, Hungary, Italy, Liechtenstein, Lithuania, Luxembourg, Malta, Peru, Portugal, Serbia, Slovakia, Slovenia, and Switzerland.

* Reissued for technical reasons.

Appendix II. Proposal for a Mandate on Explosive Remnants of War

**THIRD REVIEW CONFERENCE OF THE
STATES PARTIES TO THE
CONVENTION ON PROHIBITIONS OR
RESTRICTIONS ON THE USE OF
CERTAIN CONVENTIONAL WEAPONS
WHICH MAY BE DEEMED TO BE
EXCESSIVELY INJURIOUS OR TO
HAVE INDISCRIMINATE EFFECTS**

CCW/CONF.III/WP.15
15 November 2006

Original: ENGLISH

Geneva, 7-17 November 2006

PROPOSAL FOR A MANDATE ON EXPLOSIVE REMNANTS OF WAR

Presented by the United Kingdom of Great Britain and Northern Ireland

The Third Review Conference of the States Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which may Be Deemed to be Excessively Injurious or to Have Indiscriminate Effects decides, as a matter of urgency, to convene an intersessional meeting of governmental experts:

"to consider further the application and implementation of existing international humanitarian law to specific weapons systems that may cause explosive remnants of war, with particular focus on cluster munitions, including the factors affecting their reliability and their technical and design characteristics, with a view to minimising the humanitarian impact of the use of these weapons".

This meeting of governmental experts will inter alia consider the results of the meeting of technical experts on cluster munitions held by the ICRC. The meeting of governmental experts will report to the next meeting of States Parties.

Appendix III. Declaration on Cluster Munitions

**THIRD REVIEW CONFERENCE OF THE
STATES PARTIES TO THE
CONVENTION ON PROHIBITIONS OR
RESTRICTIONS ON THE USE OF
CERTAIN CONVENTIONAL WEAPONS
WHICH MAY BE DEEMED TO BE
EXCESSIVELY INJURIOUS OR TO
HAVE INDISCRIMINATE EFFECTS**

CCW/CONF.III/WP.18
20 November 2006

Original: ENGLISH

Geneva, 7-17 November 2006

DECLARATION ON CLUSTER MUNITIONS

Presented by Austria, Belgium, Bosnia-Herzegovina, Croatia, Costa Rica, Czech Republic, Denmark, Germany, Holy See, Hungary, Ireland, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, New Zealand, Norway, Peru, Portugal, Serbia, Slovakia, Slovenia, Sweden And Switzerland

We, the Governments of Austria, Belgium, Bosnia-Herzegovina, Croatia, Costa Rica, Czech Republic, Denmark, Germany, Holy See, Hungary, Ireland, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, New Zealand, Norway, Peru, Portugal, Serbia, Slovakia, Slovenia, Sweden and Switzerland,

Recognize that cluster munitions, due to their tendencies of having indiscriminate effects and/or a high risk of becoming explosive remnants of war, are of serious humanitarian concern during and after armed conflict;

Welcome the appeal made by United Nations Secretary General Kofi Annan to take urgent action to address the issue of cluster munitions;

Recognize the fundamental contribution by civil society towards this end;

Understand, for the purpose of this declaration, cluster munitions as air-carried or ground launched dispensers that contain sub-munitions, and where each such dispenser is designed to eject sub-munitions containing explosives designed to detonate on, prior to,

or immediately after impact on the identified target;

Call for an agreement that should inter alia:

- (a) prohibit the use of cluster munitions within concentrations of civilians;
 - (b) prohibit the development, production, stockpiling, transfer and use of cluster munitions that pose serious humanitarian hazards because they are for example unreliable and/or inaccurate;
 - (c) assure the destruction of stockpiles of cluster munitions that pose serious humanitarian hazards because they are for example unreliable and/or inaccurate, and in this context establish forms for cooperation and assistance.
-

Appendix IV. Norwegian Invitation to the Oslo Conference on Cluster Munitions

Minister of Foreign Affairs

Oslo, December 2006

COPY

Dear colleague,

An increasing number of countries and humanitarian organisations have recognised that the use of cluster munitions too often has unacceptable humanitarian consequences. This is due to their frequently indiscriminate effects and the large number of hazardous unexploded duds left behind after a conflict is over. Many conflicts have demonstrated these consequences all too clearly. Calls are now being made by an increasing number of actors for urgent and resolute preventive action, including an appeal made by UN Secretary-General Kofi Annan to take urgent action to address the issue of cluster munitions.

The Norwegian Government gives priority to working in partnership with other interested countries and relevant organisations towards an international ban on those cluster munitions that have an unacceptable humanitarian impact. I believe that we are now at a stage where these calls should be coordinated and focused.

With this in view, Norway will host an international meeting in Oslo on 22 – 23 February 2007. We are inviting countries that are ready to explore ways to address this pressing humanitarian issue in a determined and an effective manner and are prepared to develop a new legally binding international instrument on cluster munitions. We will also invite relevant UN organisations, the International Committee of the Red Cross and the NGOs from the Cluster Munitions Coalition that have been central in bringing attention to the problem.

My ambition for the meeting is that we will come together to outline the objectives and develop an action plan for a process leading to a new international instrument of international humanitarian law that will effectively address the unacceptable human and social costs of the use of cluster munitions. This would include an integrated approach aimed at preventing use and transfer and destroying stockpiles of unreliable and

inaccurate cluster munitions, as well as clearing affected areas and assisting victims in an effective and cooperative manner. This initiative does not exclude a continued discussion within the framework of CCW.

A more detailed programme for the meeting will follow. We would welcome any views and suggestions that could be included in the preparations for the meeting.

I sincerely hope that your country will be able to participate, preferably at senior official level. Please use the contact details below to let us know whether your country will be represented and by whom, and for any questions you may have regarding the meeting.

Yours sincerely,

Jonas Gahr Støre

Contact details for the Oslo meeting on cluster munitions:

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Tel: +47 22 24 39 98 (Ms Abelsen or Ms Laumann)